2019

Diversification and Its Implications for South Dakota Farmers' Identity as Farmers: Wind Farm Diversification as a Case Study

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DIVERSIFICATION AND ITS IMPLICATIONS FOR SOUTH DAKOTA FARMERS' IDENTITY AS FARMERS: WIND FARM DIVERSIFICATION AS A CASE STUDY

BY

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A dissertation submitted in partial fulfillment of the requirements for the

Doctor of Philosophy

Major in Sociology

South Dakota State University

2019

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This dissertation is approved as a creditable and independent investigation by the candidate for the Doctor of Philosophy degree and is acceptable for meeting the dissertation requirements for this degree. Acceptance of this dissertation does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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ACKNOWLEDGEMENTS

Many individuals and institutions have contributed to this dissertation. Without their efforts, this work would not exist. I would like to thank my advisor and mentor Dr. Jessica Schad for her dedication, hard work, and immense support both academically and scholarly. She always ensured that I had what I needed to be academically successful. She inspired me to love the discipline of sociology, particularly getting exposed to research in the area of environmental sociology. Dr. Schad encouraged me to push the boundaries harder while providing me with the support and guidance that I needed throughout my studies as South Dakota State University (SDSU). She always challenged my work to ensure that I acquired academic skills that I need to meet the requirements of being a successful student, researcher, and a future faculty. In doing so, she had always read my drafts timely and critically.

Dr. Schad did not only guide me, but she mentored me and took me through each and every challenge that could have disrupted my academic success, especially during preparation of the comprehensive exams and throughout the writing of this dissertation. This includes seeking financial support from funding institutions to ensure the success of my dissertation research. Not only that, Dr. Schad was always there when I asked for guidance even on issues that were less related to my dissertation work. Dr. Schad did not only consider me her student and supervised my research, she also made sure that I got a chance to improve my scholarly writing, prepare publishable articles, and gain the publishing skills I need. The work of Dr. Schad inspired me and will always be part of my success in life. I will never be thankful enough for the efforts she made toward my academic success.

I would also like to thank Dr. Meredith Redlin (who was my dissertation advisor before Dr. Schad) for allowing me to work with her and for referring me to Dr. Schad and asking her if she could serve as my dissertation advisor.

Without funding from the South Dakota Corn Utilization Council, it would not have been possible for this dissertation to exist. I thank them, and I also thank Dr. David Clay who worked with Dr. Schad to ensure that funding for my dissertation was secured. My thanks also go to both Dr. Julie Yingling (my master's advisor and member of my dissertation committee) who continuously supported my success at South Dakota State University and Dr. Maaz Gardezi for accepting to join my dissertation committee and for his useful insights that helped to improve this dissertation work. Besides, I thank Dr. Sharon Clay for accepting to be the outside person on the committee and Dr. Heike Bucking for being there during other parts. My gratitude also goes to the community of South Dakota State University, especially the Department of Sociology and Rural Studies for the opportunity to join their doctoral program and the librarians who always ensured that the assistance I needed was provided.

I must also thank the South Dakota agricultural producers who participated in my study and whom without their input, this dissertation would not be accomplished. They provided interesting information and have all been kind and welcoming during my visits to their farms or ranches to conduct interviews. Their generosity, hospitality, and participation (despite their busy schedules and the severe winter weather that frequently made it impossible to reach them) have made it possible for me to conduct this study.

Finally, I thank my wife Amel and our daughter Judie for the continuous support and understanding of my absence from home when they were in most need of me. When

the stress of being in graduate school and the writing of my dissertation got challenging, my wife was always there providing love, care, and emotional support, making sure that both me and our daughter were well taken care of. Whenever I return home at night from the library, she would ensure that there was food for me to eat and that my clothes were put in laundry even when she was in much need of her time to study or rest. Because of her, I admire the saying that “on the side of each great man, there is a woman.”

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ABSTRACT

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Studies have been conducted in the last three decades to examine the impact of the ongoing economic changes that encourage farmers to adopt nonconventional practices (such as crop diversification, on-farm recreation, and wind farming) to diversify their income. Limited research, however, has been conducted to examine the impact of on-farm diversification practices on farmers' identity as farmers (growers of food, feed, and fiber) including their role, self-conception, and family history/legacy. Using social identity and socio-ecological systems theories, this study seeks to understand how farmers construct their identity, the symbolic meanings they attach to their daily practices, and the influence of their interactions with the social and biophysical environment around them amidst their decisions to diversify. Qualitative in-depth interviews with 41 South Dakota farmers were conducted between January and April 2019, 11 interviews with farmers who diversified into wind farming and 30 with those who have engaged in other types of on-farm diversification.

I find that on-farm diversification farmers feel they are forced to not only adopt on-farm diversification, but that they also need to work off-farm in order to be able to remain in farming. Overall, I find that diversifying does not substantially impact the identity of farmers as farmers. In fact, diversification often allows farmers to remain in

farming and thus maintain a farmer identity. Younger farmers do tend to focus less on the cultural and social value of their farming practices than older ones. Diversifying also seems to contribute to the weakening of some relationships between farmers and their neighbors through which they share information on new practices and provide social and emotional support to each other. The findings also show that the way farmers got into farming determines both their adoption of on-farm diversification and whether a more traditional farmer identity is important to them. Furthermore, I find that that wind farm diversification impacts farmers' identity as farmers more than nonwind farm diversification practices.

This study provides three practical implications. First, the growing tensions between diversifiers and their neighbors that might affect information sharing and relationships between farmers calls for researchers' attention. Second, wind farm diversifiers frequently use wind farm tax revenues to increase the acceptance of wind farm opponents, but recent state regulation to remove these funds and distribute them to all counties or districts across the state has the potential to impact future adoption or support of wind farms in counties where these funds are withdrawn or not available. Third, concern among farmers regarding not only the cost of health insurance but also the lack of companies that provide health coverage in rural areas and the impacts this has on farm businesses, needs further attention by both policymakers and researchers.

CHAPTER ONE

INTRODUCTION

1.1 Background

The ongoing economic changes and technological advancements that have led to restructuring of agriculture, particularly in more developed countries, have posed remarkable challenges to farmers (Baltensperger 1987; Hendrickson and James 2004; McElwee 2006; Barbieri, Mahoney, and Butler 2008; Alsos et al. 2011). Some farmers have had difficulty surviving economically and being competitive in the global agriculture market (Barbieri, Mahoney, and Butler 2008; McElwee 2006). Some examples of the economic and technological forces that have been affecting farmers include: changes in demand for agricultural products, increased cost of inputs, changes in consumer preferences, and high costs of technological tools related to precision agriculture including GPS equipped machines and robots that are used to collect data.

Consequently, some farmers are forced to leave the agricultural sector and seek alternative income sources because they can't afford to remain in the farm business. Other farmers have either consolidated their farms or remained in the agricultural sector because of their attachment to the land and the value they place on farming (Pyysiäinen et al. 2006; McElwee 2008; Stanford-Billington and Cannon 2010). Restructuring of agriculture has economic, environmental, and social implications for farmers (Lobley 2005). It has not only affected the economic well-being of producers, but has also caused changes to their identity as farmers through altering their social roles and lifestyle and creating ethical constraints by limiting their options to make decisions and meet current economic pressures (Memarsadeghi and Patel 2003; Hendrickson and James 2004).

Agricultural restructuring refers to the changes that farmers and their businesses have experienced in the recent decades such as changes in the structures of land ownership and adjustment of farming practices due to changes in the market and agricultural policies, especially in some developed countries such as the US and UK (Memarsadeghi and Patel 2003; Lobley et al. 2005). This situation has forced farmers to reorganize their resources (e.g., land, labor, and capital) by cutting production costs, consolidating their farms, or purchasing more land to produce more (Lobley 2005).

In response to the above challenges, agricultural producers, mostly in advanced nations, have been encouraged by governments and practitioners to adopt principles of agricultural entrepreneurship including diversification and pluriactivity, thus shifting to nonconventional agriculture (e.g., alternative systems) to generate adequate income and profit, achieve agricultural sustainability, and remain in the farm business (Barbieri, Mahoney, and Butler 2008; Dobbs and Smolik 1994; Fitz-Koch et al. 2018; McElwee 2006). More specifically, to deal with ongoing economic changes, many farmers in the United States, Europe, and Australia have transformed their farming practices into nonconventional agriculture, adopted more diversified strategies, and have increased their farm sizes (Barbieri et al. 2008; Dobbs 1993; MacDonald 2013; Stenholma and Hytti 2014). Conventional farming, as Dobbs and Smolik (1994) describe, is the type of farming that predominantly relies on the use of synthetic chemicals (or chemical fertilizers) and pesticides and involves fewer conservation practices that promote environmental sustainability.

Studies have been conducted over the last three decades to examine the causes of constant decline in farm based-income and its impact on farmers, and the factors that

motivate agricultural producers to adopt nontraditional practices including on-and off-farm diversification (Dorsey 1999; Sutherland, Toma, Barnes, Matthews, and Hopkins 2016; Makate et al. 2016). These studies focused on different types of diversification such as farm-recreation and agritourism, renewable energy (e.g., wind farming and biomass), leasing out farm facilities and equipment, provision of contracting services, organic farming; the influence of farmers' identity and their characteristics or attitudes and decisions to diversify (Burton 2004) or engage in conservation practices (Baumgart-Getz et al. 2012); and benefits and challenges associated with diversification (Fritz-Koch et al. 2018; McGuire et al. 2015; Stenholma and Hytti 2014; Sulemana and James 2014; Sutherland and Darnhofer 2012; Vesala and Vesala 2010; Warren et al. 2016). Some of these studies also addressed elements that constitute farmer identity and how the ongoing agricultural changes have affected farmer identities (Brandth and Haugen 2011; Burton 2004; McGuire et al. 2013; Stenholma, Hytti 2014).

Limited research, however, has been conducted to examine the impact of on-farm diversification on producers' identity as farmers (Sutherland et al. 2016). Farmers' identity affects their decisions and their motivation to adopt conservation practices. Therefore, it is important to examine the how diversification impacts farmers' identity (McGuire et al. 2015). This qualitative study investigates the implications of on-farm diversification on South Dakota agricultural producers' identity as farmers. It examines whether South Dakota farmers' identity (including their self-concept, and their role and family histories/legacy) is impacted because of their engagement in on-farm diversification to increase their income. For instance, examples of on-farm diversification that this study focuses on include crop diversification, adoption of wind farming (leasing

out the land to wind farm companies to develop wind turbines), leasing out farm facilities and equipment, using one's equipment on other farmers' operations to generate further income (also known as custom work), leasing out farmland, and engaging in contracting services. Particularly, in recent decades, farmers in more developed countries have become more homogeneous in increasingly adopting agricultural specialization (e.g., concentrating on specific crops, using the same seed and fertilizers over time) and focused less on farm diversification (Winsberg 1982).

However, today there is growing demand for farmers to step away from specialization and once again increase the diversification of their operations (especially small farmers) in order to increase environmental conservation, be competitive, and remain in business (McElwee 2008; McGuire 2018; Milestad and Darnhofer 2003). Moreover, this study explores how farmers construct their identity and negotiate the meaning of their daily agricultural activities or the symbolic meaning that they attach to their practices (Brandth and Haugen 2011; Burton 2004; Di Domenico and Miller 2012), whether producers still identify themselves as farmers once they adopt the indicated nontraditional activities, and to what extent the identity or legacy of farming is important to them (McGuire et al. 2015).

When it comes to diversification, agricultural producers (especially small-scale and family farm operators) tend to maintain their social and cultural identity that is attached to their land and farms (Burton 2004). They are concerned about making profit and increasing the financial sustainability of their farms (Stenholma and Hytti 2014). However, they dedicate significant efforts to maintaining their social identity and lifestyle (Morris, Henley, and Dowell 2017). In other words, farmers value their family dynamics

(e.g., interactions among family members and preservation of relations between them), self-identity (how they perceive themselves), self-worth, social identity (how others perceive them), lifestyle, and retention of "good farmer" identity. Hence, diversification into nonconventional agricultural activities might challenge farmers to maintain or restore their traditional identity as farmers (Burton 2004; Lobao and Meyer 2001; Morris, Henley, and Dowell 2017; Stenholma and Hytti 2014; Zakaria et al. 2005). Brandth and Haugen (2010) found that diversification (both on-and/or off-farm) weakens the identity of agricultural producers and their attachment to the land, therefore it increases farmers' concerns of losing their identity or having it replaced (Brandth and Haugen 2011; Burton 1998; Fitz-Koch et al. 2018).

1.2 The Purpose of the Study

Examining farmers' identity and how it is impacted by new agricultural trends and developments that led farmers to adopt new strategies such as farm diversification is important because it affects farmers' decisions, and their motivations to engage in conservation practices as well as their ability to remain in business (McGuire et al. 2015). It allows us to understand not only the conventional role of farmers and how it shapes their current identity formation, but also the role of farmers' identity once they engage in entrepreneurially-oriented activities (Vesala and Vesala 2012). Sulemana and James (2014) argue that farmers are generally less concerned about environmental conservation than preservation of their identity and public image. In other words, farmers place significant value on their identity and tend to desire to maintain it as well as preserve the conception of being a good farmer (Sullivan et al. 1996; Schwalbe and Mason-Schrock

1996; Sulemana and James 2014). They engage in certain practices because they conceive that doing so represents them or symbolizes their identity.

In addition, farms in North America and other more developed countries are predominantly family managed businesses which are passed down from generation to generation (Burton 2004; Fitz-Koch et al. 2018; Hennon 2012; Hansson et al. 2013; Tylor, Norris, and Howard 1998). Therefore, it is important to analyze the different contexts (social, structural, and institutional milieus) in which farmers operate their businesses and their impact on farmers' identity. These milieus involve farmers' values, attitudes, societal norms, lifestyle, and the political, economic, and physical environment. Rural and agricultural practices are conducted in social and cultural contexts that differ from urban businesses. Agricultural communities often value the social aspect (such as social status, norms, values, attitudes, and lifestyle) of their farm practices (Burton 2004; Gasson 1978; Hansson et al. 2013; Pyysiäinen et al. 2006).

The study objectives are to examine: 1) how South Dakota agricultural producers engage in on-farm diversification to increase their income and profit and to overcome challenges that are posed by ongoing agricultural changes, and subsequently, 2) how it impacts their identity as farmers. 3) the study also explores how South Dakota farmers construct their identity and negotiate the meaning of their daily agricultural activities or the symbolic meaning that they attach to their practices, and 4) the extent to which the identity or legacy of farming is important to South Dakota producers.

Besides examining the overall impact of on-farm diversification on producers' identity, 5) a case study approach is used to explore whether South Dakota farmers who lease their lands to wind energy corporations perceive that wind turbines that are built on

their lands have an impact on their identity as farmers. Throughout the study, the term farm diversification is intended to refer to on-farm diversification, unless, otherwise indicated otherwise. Off-farm diversification may be used only to illustrate the differences or similarities with on-farm diversification, and to explain the impact of these two strategies.

Sutherland and Darnhofer (2012) argue that the nature of farm business and the context in which farm businesses operate is different than that in other enterprises, because farm businesses are extremely likely be transferred to next generations. In other words, farmers are different from other business managers because they have strong attachment to the land they farm and the social environment in which they live, work, recreate, and socialize (Quinn and Halfacre 2014). Also, there is a significant relationship between individuals and the location where they live and work, which affects their success. To be a successful farmer, an individual ought to love the farm or land and have strong connection to it and the community around her/him. This notion is referred as place attachment, which includes physical and social bonds to the land (Quinn and Halfacre 2014). Farmers' values, beliefs, attitudes, knowledge, and prior experience are not the only factors that shape their practices, but their relations with other members of the community and their interactions with biophysical environment such as field, farm, and the land (which constitute their identity) also influence their behavior (McGuire et al. 2015).

The nature of relationships between family dynamics and farm businesses is multifaceted. It involves a historical bond or connection between farm families, farming style, the land, and farm management, as well as relationships between members of the

farm family who represent different generations (Hansson et al. 2013; Hildenbrand and Hennon 2005). This context necessitates socialization of old and young members of farming families so that the children and youth are exposed to, and brought into, farming culture (McElwee 2006; Tylor et al. 1998; Urban and Xaba 2016). The existing literature shows that transformation from traditional to nontraditional agriculture impacts the social and cultural structure of farmers and their businesses. Therefore, I believe that it is essential to investigate how South Dakota agricultural producers construct their identity and whether they think farm diversification has affected their identity as farmers. And if so, to what extent they feel threatened by the new identity (entrepreneur-farmer identity) and how it challenges their producer-farmer identity.

Moreover, the entrepreneur-farmer identity is increasingly becoming the predominant farmer identity, regardless of whether it adheres to societal norms and values of local communities (Stenholma and Hytti 2014). In this state, the entrepreneur-farmer is not only required to be entrepreneurial but also to represent an agent of change with regards to norms of the society. In contrast, the producer-farmer tends to observe the societal norms of the local community such as the traditional role of farmer and what constitutes being a good farmer (Stenholma and Hytti 2014). Stenholma and Hytti (2014) argue that construction of the new identity (entrepreneur-farmer identity) and giving it legitimacy, challenges traditional farmers who remain committed to adhering to the existing societal norms and behavior. Similarly, Sutherland and Darnhofer (2012) argue that to gain legitimacy and recognition from the local society and its institutional norms, entrepreneur-farmers need to adhere to the set of norms and principles of the local community and its culture.

Finally, the importance of farmer identity relies on the notion that farmers value their autonomy and self-conception (McGuire et al. 2015). Farmers' self-conception refers to their perceptions of their role as farmers and how others in the community view them and their role, especially how farmers relate to the new role as a result of adoption of nonconventional practices (Hauser et al. 2016). In preserving their identity, farmers can maintain their autonomy. Stock and Forney (2014) argue that autonomy is the central value of farmers' identity or self-definition, which intersects with farmer agency, freedom, decision-making, and independence while simultaneously reinforcing the identity of farmers. Autonomy, as Stock and Forney (2014:165) define, is "an expression of freedom and independence to structure their own life often with a celebration of living closer to nature and more rurally." Farmer self-conception and autonomy are important factors in their success and decisions. They perceive who they are by reacting to the way society views them, the role they play in society and their communities, and the public image they represent. Farmers are not only concerned about the uncertainty that is associated with adopting new practices, but they are also concerned that they might be criticized by other farmers and community members for adopting uncommon practices that might not adhere social norms. This might be the reason some farmers resist adoption of on-farm diversification and other unconventional agriculture (Sulemana and James 2014).

This is one of limited number of studies to examine how farmers' engagement in on-farm diversification impacts their identity as farmers. The study contributes to the existing literature by depicting how farmers maintain their identity as they engage in on-farm diversification. It is essential to study how on-farm diversification affects the image

that farmers maintain about themselves and their practices and their expectations of how society views them affect farmer's decisions, because these factors affect how agricultural producers make decisions about their operations (Sulemana and James 2014). In this sense, the study helps us understand how farmers interpret their daily interactions with nature and with the larger society, and the meaning they assign to these interactions.

While some might argue that all farmers are entrepreneurial, some research has shown how some farmers seek maintain their traditional role and identity, and how the new identity (entrepreneur identity) can emerge and alter the traditional identity of farmers. In this respect, farmers are confused about whether to adopt on-farm diversification (and diversification in general), thus have their identity altered or to remain in their traditional role and maintain their identity (Brandth and Haugen 2011). Even those who may incorporate the two identities may experience challenges to balance between keeping the traditional role and simultaneously engage in the new role (Stenholma and Hytti 2014). Therefore, I hypothesize farmers experience disequilibrium by being unable to balance between the two identities. Besides, the farm family represents a system and diversification disrupts farmers' interaction with the physical environment and their social relationships. Usage of identity and socio-ecological systems theories described in subsequent chapters will help to explain how adoption of on-farm diversification affects farmers' identity and how it shapes their interaction with their ecological and social environments.

1.3 Research Questions

1) What types of on-farm diversification do South Dakota farmers adopt to increase their income or stay in business? 2) To what extent do sociodemographic characteristics of

farmers such as age, education, and farm size contribute to farmers' adoption of on-farm diversification? 3) How do South Dakota farmers construct their identity and negotiate the symbolic meaning of their daily practices amidst diversification? 4) How does farmers' engagement in diversification (including wind farming in some cases) affect/change their identity as farmers? To what extent does it affect their identity? And finally, 5) What is the magnitude of tensions between producer-farmer identity and entrepreneur-farmer identity?

1.5 Dissertation Outline

This dissertation is organized in nine chapters, with this Chapter (One) primarily highlighting the purpose and significance of the study as well as research questions. Chapter Two includes a review of literature on the nature and definition of farm diversification, types of farm diversification, the importance of farm identity, how farmers construct their identity, and the impact of on-farm diversification on farmers' identity. Chapter Three covers literature relevant to a case study on how wind farm diversification impacts producers' identity as farmers.

Chapter Four includes the conceptual framework that illustrates how farmers construct their identity, the symbolic meanings they attach to their daily practices, and the extent to which the way farmers got into farming shapes their perceptions about their identity and their farm decisions. Additionally, the chapter addresses how farmers interact with their social and physical environment and how this interaction influences their decision to diversify. The chapter also highlights whether and how on-farm diversification impacts farmers' identity as farmers. In this respect, the study uses two theoretical frameworks (identity theory and socio-ecological systems theory) to explain

the impact of farm diversification on farmers' identity as farmers including their interaction with their social and physical environment. Chapter Five outlines the research methods that are used to collect and analyze data. Chapter Six presents findings on the characteristics of research participants and the type and prevalence of farm diversification that participants have adopted. Chapter Seven provides findings on the impact of on-farm diversification on the identity of South Dakota producers as farmers. Chapter Eight present a case study about the impact of wind farm diversification (as one increasingly prevalent form of on-farm diversification) on producers' identity as farmers. And finally, Chapter Nine is allocated for discussion, conclusions, research implications, limitations, and suggestions for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Adoption of multifunctional agriculture is increasing worldwide, which has contributed to development of farm diversification. According to Meraner et al. (2015), the term multifunctionality in agriculture was first used in 1992 in the United Nations Conference on Environment and Development that was held in Rio de Janeiro. It was described as multifunctional aspects of agriculture that serve different purposes or various agricultural practices that are aimed to increase profit and promote food security and sustainable development (Meraner et al. 2015). In other words, multifunctional agriculture involves multiple functions that go beyond the primary role of agriculture which focuses on food and fiber production. For instance, adopting multifunctionality allows farmers to produce various commodity and non-commodity products and services and conserve the environment. Besides, multifunctionality of agriculture enhances the economic growth and influences the social and cultural aspects of farming (Huylenbroeck et al. 2007; Meraner et al. 2015).

Farm diversification is not a new phenomenon, however, the emphasis of farm diversification from a management and entrepreneurship perspective is relatively new or being rediscovered (Brandth and Haugen 2011; Makate et al. 2016). Farm diversification started evolving in the 1970s during the emergence of the environmentalist movement and as a result of an increase in scholars' attention to modern agri-environmental issues such as soil degradation, increase of pollutants, irrigation problems, climate change, and deforestation (Burton 2004; Lakner et al. 2018; Sutherland et al. 2016). Other factors that

have led to the development of farm diversification strategies include oversupply and decline in value of agricultural products in the 1980s and increase in public concerns about the impact of farming practices on the safety and health of producers (Burton 2004; Coye 1985; Kirkhorn and Schenker 2001; Wimalawansa and Wimalawansa 2014). Ongoing economic changes such as the constant decline in agricultural revenues as well as technological advancements have continuously affected farmers in the last three decades, thus multifunctionalism which includes farm diversification has been perceived as one solution to this problem (Brandth and Haugen 2011).

Moreover, recent agricultural reforms in Europe (e.g., Farm Diversification Grant Scheme – FDGS) have led to the advancement of literature in this field of study. The aim of FDGS is to introduce new and innovative ways for farmers to diversify their farm practices and increase their income. In other words, one of FDGS's aims is to encourage farmers to voluntarily shift their farm practices to nonconventional agriculture to overcome the constant decline in farm-based revenues (Burton 2004; Campbell White & Associates Pty Ltd, and Alan Black. 2002; Ilbery 1993). Similarly, many efforts have been made in the U.S. and Australia to deal with the ongoing decline in farm income, particularly the decreasing farm revenues among conventional agricultural producers (Barbiri et al. 2008; Tonts et al. 2000). For instance, the federal government introduced the U.S. Small Farms Policy in September 1999, and the U.S. Farm Bill (Farm Security and Rural Investment Act) in 2002 with the primary aim being to provide funding for farm activities and to support and enhance regulations, initiatives, and outreach programs that address the needs of small farms to become economically sustainable (Barbiri et al. 2008). The above policies encourage farmers to eliminate adoption of agricultural

specialization or peripheralization (a situation in which producers rely on limited practices such as growing a few crops and using specific seed and fertilizers but tend to expand the farm size) and focus on diversification, which focuses on raising various crops or livestock on limited farmland (Siddiqui and Rahman 2016).

Agricultural specialization has become increasingly the norm among agricultural producers in the United States and other western countries in the last six decades (Barbiri et al. 2008; Siddiqui and Rahman 2016). Agricultural specialization demands farmers to produce more in order to remain in farming. However, producing more often requires more land which small farmers with fewer financial resources cannot afford, thus many have struggled to economically improve their farm businesses (Siddiqui and Rahman 2016). Specifically, farmers who engage in agricultural specialization often need to produce more using specific crops and inputs so that they can remain competitive. However, producing more requires a large amount of land which small farm operators might not afford, because the expansion of land requires more financial resources as the land prices are constantly increasing (Czyżewski and Smędzik-Ambroży 2015). Only producers with large amount of land can produce more in the event of specialized agriculture. In other words, as Siddiqui and Rahman (2016) argue, specialization is more common among rich farmers (typically large farm operators) who can buy more land and increase the size of the farm because they require more land to produce more in order to succeed.

In some European countries such as Finland where the number of farms as well as the number of individuals employed in farm sector have gradually decreased while the farm size is constantly increasing, farmers have engaged in specialization to increase

their income and production. In other words, as farm size increases, specialization is expected to increase as well as productivity (McElwee 2006). Conversely, small farmers and farmers with limited land and financial resources often focus on diversification (Siddiqui and Rahman 2016). Therefore, some small farm operators have to either consolidate their lands to remain in business or diversify their operations so that if certain products fail, others can help provide inputs for the following year. Besides, diversification increases not only the economic sustainability of the farm, but can also make it more environmentally sustainable (Czyżewski and Smędzik-Ambroży 2015).

Although the context of farm diversification varies from one region or country to another, some common strategies that the above agricultural policies promote include incorporation of new and diverse agricultural practices into farm operations (Burton 2004; McGuire et al. 2015; Rivaroli et al. 2017). For instance, crop diversification, integration of livestock into cropping systems, adopting conservation practices to reduce input costs, adopting precision agriculture such as GPS to guide the farming activities and help farmers to efficiently manage their operations, engaging in agritourism and renewable energy (e.g., wind farm and biomass) production, establishing shops on the farmland to sell farm products, and building processing sites/units to produce substances such as milk products. The strategies farmers have adopted also include provision of leisure activities (such as having urban tourists visiting the farm on holidays), leasing farm facilities and equipment, and engaging in forestry business and contracting services (Burton 2004; McGuire et al. 2015; Rivaroli et al. 2017).

Farm contracting refers to a situation in which a farmer or farm family voluntarily signs a contract with a nonfarm entity (individuals or corporations) which requires the

farmer to provide products with specific expectations, obligations, or standards (quantity and quality) that the two parties agree upon (United States Department of Agriculture – USDA 2008). Meraner et al. (2015) state that incorporating the above strategies of farm diversification leads to multifunctional agriculture. In sum, multifunctional agriculture, as described previously, is a type of agriculture in which farmers adopt various practices simultaneously to increase their profit and achieve environmental conservation.

2.2 The Nature and Definition of Farm Diversification

Farm diversification has been interpreted in different ways. Some scholars use it interchangeably with agricultural multifunctionality (Morgan et al. 2010; Meraner et al. 2015), others argue that it is a result of the increasing multifunctional agricultural or diversified activities that farmers adopt to increase their profit and sustain their business (Lakner et al. 2018). However, to some extent, these definitions have at least one aspect in common. In a general sense, they refer to incorporation of alternative and/or nontraditional strategies into new or existing farm enterprises to provide multiple sources of farm income and maintain the sustainability of farm business. For instance, Bowler et al. (1996) and Sutherland et al. (2016:11) describe farm diversification as a situation in which agricultural producers add nontraditional farm-based sources of income to an existing farm business to increase their financial resources and to overcome the decline in farm revenues. Similarly, Rivaroli et al. (2017) define farm diversification as instances in which farmers employ variety of nontraditional farming strategies using their own resources.

Diversification is associated with the process of engaging in more diverse or varied activities, or the production of different services or materials concurrently.

According to Chaplain (2000), farm diversification as a process involves four different stages. The first stage is described as initial stage, the stage in which changes are carried out at the cropping level, the level in which farmers move away from monoculture production. In this aspect, Siddiqui and Rahaman (2016:5133) define crop diversification as a process of incorporating various cropping systems such as adding new crops to the existing farmland or replacing and substituting the existing crops with other crops. Makate et al. (2016:2) provide a more specific definition of crop diversification. They describe it as "the practice of cultivating more than one variety of crops belonging to the same or different species in a given area in the form of rotations and or intercropping." This might also include eliminating the production of surplus commodities and focusing on adding more diverse agricultural activities (Chaplain 2000).

The second stage of diversification is a situation in which the agricultural producer engages in multiple enterprises. In this stage, the farmer might produce and sell various crops at different times, which gives more options to generate income and profit. For instance, the producers can raise various crops and sell some of them as early as they can while reserve the other types of crops for a different season or when the price is more attractive. The third stage, which is somewhat similar to the second stage, is the stage in which diversification is interpreted as mixed farming. Mixed farming is described as a farming system in which producers incorporate livestock and crops, thus producing by-products (Van Keulen, Lantinga, and Van Laar 1998). For instance, by integrating livestock into crops and feeding cows the crop residues or releasing them on pastureland, farmers can produce natural fertilizer (e.g., manure) which helps them reduce input costs (Sulc and Franzluebbers 2014) In the fourth stage, the farmer integrates different

activities into farming, or engages in nontraditional farming practices (such as integrating crops and livestock) as a way to diversify the business (Chaplain 2000). In this stage, producers move from conventional to nonconventional agricultural practices such as building a meat processing unit on the farmland (Chaplain 2000).

Further, Campbell et al. (2002) distinguish between conventional and nonconventional agricultural practices. They characterized conventional as the type of farm enterprise that focuses on specialization and relies on excessive usage of agrochemicals and production of specialized crops or livestock to generate income. As Pimentel (2005) indicates, the majority of the US farmers adopt conventional agriculture, the type of farming in which producers excessively apply pesticides, insecticides, fungicides, and other types of chemicals. Application of these chemicals has different implications for not only the environment (the land and wildlife habitat) and the public health because of groundwater and air contamination, but can also cause economic losses to farmers such as crop loss (Pimentel 2005). Campbell et al. (2002), on the other hand, describe nonconventional farming as a farm enterprise that focuses on diversification where producers generate their income from various sources such as various crops, integrated crop and livestock, accommodation or agritourism, forestry activities, and off-farm employment. Off-farm employment in this aspect is often used as a way to generate financial resources to support the farm (Campbell et al. 2002).

In this study, Irefer to farm diversification as the adoption of on-farm nonconventional practices or incorporation of alternative/nontraditional strategies such as crop diversification into new or existing farm enterprises or adding wind farming as form of diversification to diversify sources of farm income. Shucksmith and Winter (1990)

assert that diversification as a concept needs to be narrowed and exclusively used to refer to on-farm diversification, or farm centered activities. Current literature on the definition of on-farm diversification, however, is inconsistent. For instance, while Rivaroli et al. (2017) classify agritourism as a type of on-farm diversification strategy, Burton (2004) consider it as off-farm diversification.

2.3 Types of Farm Diversification

Farm diversification can include both on- and off-farm diversification. They are two strategies, although not mutually exclusive, that farmers use to increase their income (Rivaroli et al. 2017). On-farm diversification (e.g., farm-centered diversification) refers to adjustment to farm activities by diversifying them to generate income and profit to maintain the economic and environmental sustainability of the farm operation (Bartolini, Andreoli, and Brunori 2014), which is often referred to as multifunctionality in agriculture. On-farm diversification may include agricultural contracting (although less common among crop producers than livestock farmers), leasing out farm equipment and facilities, engaging in crop diversification, leasing out land, establishing on-farm shops, agritourism, and adopting wind farming and other renewable energy projects such as biomass. In contrast, off-farm diversification involves creation of new business activities, not necessarily generated from agricultural resources as an addition to the existing farm enterprise. It includes, for example, off-farm employment (both to support on-farm activities or as a preplan to gradually exit the agriculture sector), establishing agri-processing industry (such as meat or dairy processing units), and other types of non-agricultural activities (Hansson et al.2013; McElwee 2005).

Furthermore, Rivaroli et al. (2017) categorizes farm diversification in two themes: deepening, and broadening. Deepening refers to adoption of practices (such as ag-processing units that are built on-farm, organic farming) which add a value to agricultural products. In this case, farmers diversify by adding new farm-based resources or simply changing or modifying methods and strategies of farming. Conversely, broadening is described as the farm practices that provide new income sources that are not limited to, or go beyond than agricultural production (Rivaroli et al. 2017). In other words, broadening includes addition of activities that are not related to farm activities (non-farm-based practices) such as bringing tourists onto farmland to generate more income. Examples of broadening also include care farming (e.g., introducing educational and training programs to farmers and promoting social psychological well-being of producers such as providing mental health treatment services to them), and wind farms (if they are built on farms and are considered value-added agricultural products) (Rivaroli et al. (2017).

In this respect, it is important to note that wind energy that is generated through wind turbines that are built on the farmland is classified as a form of on-farm diversification (Sutherland, Brown, and Schwarz 2012; Vilsack and Clark 2011; European Commission's Directorate-General Agriculture and Rural Development 2011). Moreover, farm diversification may also include non-earned income that farmers generate without necessarily putting in physical effort, in other words, activities that farmers carry out which do not require human resources. For example, investing in monetary assets such as the interest that is generated from savings. This might also include pensions, insurance claims and other state benefits (Shucksmith et al. 1989).

2.4 Drivers of Farm Diversification

Various factors motivate farmers to diversify their operations and to generate additional income from various sources to sustain their farm business (McElwee 2006). Chaplain (2000) states that one of the ultimate goals of diversifying farm operations is the accumulation of financial assets and the intent to survive. For instance, some farmers or their family members work off the farm to afford health insurance, machinery or equipment and other inputs, and secure financial resources as well as maintain their farming lifestyle (Brandth and Haugen 2011; Chaplain 2000). However, other farmers might work off the farm as a way to gradually quit farming, especially if farming does not generate adequate income to support the family and to sustain the farm (Chaplain 2000).

Moreover, some farmers diversify for climate or environmental reasons, because some crops do not grow on certain lands or the weather affects their operation. Therefore, adoption of crop diversification might be one of, if not the only, choice for agricultural producers (Warren et al. 2016). Adoption of crop diversification requires both suitable location and availability of resources such as land, labor, and capital (Ilbery 1991). McGuire, Morton, and Cast (2013) argue that conventional farmers focus on producing high yields and profits (utilizing the land to its potential) but are less concerned about the environmental impact of farming. However, they also indicate that farmers are moving toward adoption of agricultural practices that do not only focus on generating economic benefits, but also maintaining the environment, the situation that McGuire, Morton, and Cast (2013) and Floress et al. (2016) describe as dual interest framework, which contends that farmers' are not only motivated to generate income and profit, but also their attitudes

and personal beliefs such as those related to conservation practices contribute to how they think and manage their operations (McGuire, Morton, and Cast 2013).

Farm diversification is more prevalent in places that are close to urban markets and consumers. Being close to large cities, farmers can grow diversified nonconventional products such as small grains, various types of livestock, vegetables, and fruits and sell them to neighbors and local communities (McElwee 2005; Bartolini et al. 2014). Sociodemographic characteristics of farmers can also impact producers' decisions to diversify. These characteristics include farm size, tenancy status, previous experience (both off-and-on-farming), education level and training a farmer receives, age, farm employment status (full or part-time) and the type of farming (crop production, livestock, etc.) (McElwee 2005; Weltina et al. 2017; Rivaroli et al. 2017). For instance, small farm operators are more likely to diversify than large farm operators because expanding their activities beyond certain crops provides them with different market options that help them remain competitive. Also, young generation farmers are more likely to diversify than old generations of farmers. Besides, farmers who engage in livestock farming are less likely to diversify than those who engage in crop production (Rivaroli et al. 2017). Also, arable and seasonal farmers are more likely to diversify than those who engage in intensive farming or those who farm all seasons (Rivaroli et al. 2017).

Other common factors that motivate farmers to adopt diversification are lifestyle and family circumstances. The intent of farm families to improve their lifestyle and way of life by acquiring additional capital might become a motive for diversification. As previously discussed, farm businesses operate in a context that differs from nonfarm enterprises, and there is a close link between family farms and the family lifestyle as well

as the family history and culture (Sutherland and Darnhofer 2012). Some farm families may diversify just because they want to change their lifestyle by switching from a certain farming operation (e.g., livestock, crop production) to another. These activities often include developing an enterprise that requires less labor, especially if the principal farmers are aging and there are no younger generations to whom the farmland can be transferred (McElwee 2006).

Family circumstances include the notion that young members of farm families often return to their parent/family farms after they finish college. Hence, farm families might see a need to expand their farm activities to include and keep their children around as well as to benefit from human capital that their children bring into the farm as adults (McElwee 2006). Farm families might also diversify their operations to include new family members that have joined the family through marriage (Fitz-Koch et al.2018; Taylor, Norris, and Howard 1998), which may energize the business by bringing new innovations, competences, skills, and networks. Fitz-Koch et al (2018) and Taylor et al. (1998) believe that expanding farm operations to include more farm family members such as children and spouses is a form of farm diversification. This statement, however, contradicts the definition by the UK's Department of Environmental, Food, and Rural Affairs (DEFRA 2007b) which does not consider inclusion of family members in farm business as diversification.

In general, many factors motivate farmers to engage in farm diversification. However, the most cited motive of farmers' decision to diversify is the economic pressure that they experience such as increase in input costs, financial needs, and decline

in farm-based income which can lead to farmers experiencing anxiety and depression (Di Domenico and Miller 2012).

2.5 Barriers to Farm Diversification

McElwee and Robsonn (2005) describe barriers to farm diversification as a set of different factors such as political, social, economic, technical, or personal constraints that temporarily or permanently hinder the ability of farmers to access opportunities and improve their businesses. Some of the essential barriers to farm diversification are farmers' fear of losing their identity as farmers, and concerns or hesitance of producers of being involved in risk and uncertainty (Burton 2004; McGuire et al 2015). Nevertheless, if deciding to diversify, producers may experience further challenges such as the fear that diversification might become a replacement to their main or traditional farming activities (McElwee and Bosworth 2010). Additionally, farmers are heterogonous, and experience challenges to diversification differently. The most significant barriers to farm diversification are, however, related to farmers' level of education, access to business advice, and access to information and knowledge, which are also key factors in farmers' decisions to diversify (Ilbery 1978; Morris, Henley, and Dowell 2017). Diversification and adoption of technology require knowledge and managerial skills that are acquired through formal education, self-learning, or training. Morris, Henley, and Dowell (2017) assert farmers with better level of education, knowledge, entrepreneurial skills, and social networks are more likely to become innovative, seek and exploit business opportunities, and remain economically successful.

Moreover, barriers to diversify farm operations include the broader social, cultural, political, and economic contexts in which farmers operate their businesses. For

example, many factors such as government regulations, access to financial resources to purchase equipment, and producers' concerns about how the larger society will conceive their new role and changes that they adopt affect farmers' decisions (Brandth and Haugen 2011; Di Domenico and Miller 2012; Iles and Marsh 2012). Farmers are often concerned about the costs of purchasing or leasing equipment and obtaining new crops and materials, the fees to provide training to family members who would manage the additional on-farm activities, as well as the legal issues including government policies and regulations that focus on the legality of farm expansion (McElwee 2005).

2.6 The Role of Training and Networking on Adoption of Nonconventional Practices

Training and networking play a significant role in farmers' ability to adopt diversification and transform their operations to nonconventional farming. Constant participation in training provides farmers with opportunities to learn new practices related to farm diversification (Lauwere 2005). Also, building and utilization of social networks help farmers to learn new practices from other farmers and experts, which influences farmers' motivations and goals (Baumgart-Getz et al. 2012). In other words, training and networking help farmers to learn new innovative ideas related to products, processes, markets, andorganizations. They also influence the managerial and entrepreneurial skills that farmers need to succeed, and strategies that they use to enhance their economic success, keep up with business demands, and achieve agricultural sustainability (McElwee 2006; Lauwere 2005). In this respect, farmers require skills to succeed economically and to achieve environmental and agricultural sustainability.

Farmers need various skills such as organizational and business management skills that will increase their chances to learn new ideas about farm diversification and

conservation practicesand access business opportunities (Morgan et al. 2010). Scholars argue that to be entrepreneurially successful, farmers need to engage in training programs that focus on development of their professional, managerial, and entrepreneurial skills (Tassell and Keller 1991; Stanford-Billington and Cannon 2010). Similarly, social networks play a significant role in the entrepreneurial success of farmers and their ability to diversify or adopt nonconventional practices (McGuire, Morton, and Cast 2013). They include the connections between farmers which are used to exchange information about diversification practices and to provide access to information (both between farmers themselves and between them and experts). Social networks help farmers to learn from one another and farmers are more likely to adopt diversification when they see their neighbors or others in the community adopting a practice (Oreszczyn, Lane, and Carr 2010).

By providing access to information through formal training and participation in local and regional conferences, farmers increase their awareness, social networks, and learn further from their peers and experts which increase their positive attitudes towards adoption of nonconventional practices and reduces uncertainty and the fear of risk-taking (McGuire, Morton, and Cast 2013). Farmers, by nature, trust their peers more than they trust the academic community or policymakers, they are more likely to adopt new practices when they see their neighbors or peers (peer effects) doing so (Bell et al. 2017). Thus, using farm-to-farmer connections can enhance farmers' opportunities to diversify and increase productivity and profitability of their farms (Bell et al. 2017).

2.7 Definition and Importance of Farm identity

The term identity in its general sense refers to "the set of meanings that define who one is, when one is an occupant of a particular role in society, a member of a particular group, or claims particular characteristics that identify him or her as a unique person" (Bruke and Stets 2009:3). The self-meanings of farmers include values that they hold and define who they are as individuals, which serve as a base for their identity. Values affect the goals of farmers and decisions they make, or the way they think and act, as well as the role they represent in society (McGuire, Morton, and Cast 2013). Individuals have multiple identities and personalities that they are assigned to by others and society based on the social networks they are affiliated with, which guide and organize the way the individual acts. For instance, a farmer might have a gender identity, group identity, and farmer identity.

In addition, a farmer can be a member of different groups that have their own identity, for instance, s/he can be a church member, a teacher, and a farmer. In other words, individuals perform different roles and join or associate with different groups at the same time. Individuals assign meaning to their actions and the roles they play in different groups and contexts (Bruke and Stets 2009). Understanding the personality of farmers, and their role and identity (the way farmers' identity is constructed) is complex, because farmers can have several identities concurrently which are often related to their lifestyle and goals, and values they represent. In this respect, some scholars argue that farm business is unlike any other businesses because it involves lifestyle and farmers' attachment to their land and community (McGuire, Morton, and Cast 2013).

According to McGuire (2015), the concept of farmer identity was developed in Great Britain to explain the reason farmers resisted voluntarily participation in a nationally funded program. This program aimed to encourage farmers at the time to incorporate forestry activities into crop production so as to diversify their income sources and overcome the decline in farm-based revenues. The concern over farmers' identity being threatened by the increasing farm diversification activities motivated scholars such as Burton (2004), Fitz-Koch et al. (2018), Di Domenico and Miller (2012), Stenholma and Hytti (2014), and Brandth and Haugen (2011) to study the context in which farm businesses operate, particularly farmers' attachment to their identity, the way farmers view themselves or construct their identity and the role they play as well as the way the society views them. For instance, Stenholma and Hytti (2014) found that farmers who identify themselves as producers value traditional farming, thus they are reluctant to adopt diversification. The authors argue that traditional farmers perceive that maintaining old farming practices is necessary to preserve their social and cultural values as farmers. Farmers deem traditional farm identity as a legitimate identity that is socially accepted by the larger society, as opposed to entrepreneur-identity. Therefore, preserving traditional farming helps producers to maintain their identity as farmers. Particularly, doing so decreases farmers' concerns about losing their identity and experiencing change or adjustments to their lifestyle as well as the public image they represent (Di Domenico and Miller 2012).

Farmer identity often involves both individual-and family-farm identity, which is an important factor as it influences producers' decisions about their practices. Farming is primarily a family-oriented business (Calus and Huylenbroeck 2010), which means that

decisions to adopt diversification, management, and succession are often not made by the individual operator, they are made by the farm family or household as an institution. In this study, I use the terms farm family to refer to the extended family members that reside on or off the farmland that is operated by not only the primary landowner, but also by the spouses, children, son/daughter in-laws, and close relatives. Accordingly, once producers engage in nonconventional agricultural activities such as diversification, they can lose their traditional identity and value, or experience a weakened identity as their role undergoes changes (Zakaria et al.2005). Moreover, a strong producer-identity is often attached to the perceived symbolic value (such as growing crops or raising cattle – producing dairy products) that farmers assign to their operations.

Hence, researchers, practitioners, and agriculturalists need to understand the link between farmers' decisions about their production and their impact on the social norms of farming, farmers, and local communities (Fitz-Koch 2018; Stenholma and Hytti 2014). Although some farmers in the US adopt nonconventional agriculture which includes engaging in diversification and conservation practices to preserve the land and the environment and increase their income and profit, the productionist (or producer) identity is the predominant farmer identity in the country (McGuire, Morton, and Cast 2013). This is a farmer identity that focuses on producing high yields without necessarily adopting strategic planning, innovativeness, creative thinking, or fully conserving the environment.

It makes sense to argue that farmers' construction of a new identity (entrepreneur-identity) is not substantially different than the way they build their traditional producer-identity. The difference, however, is that some of the core principles of entrepreneurial agriculture include that farmers ought to become innovative or think creatively as

businesspeople, adopt strategic planning acquire professional as well as managerial and entrepreneurial skills, and advance and/or transfer their farming operations into a more profit-oriented business (Stanford-Billington and Cannon 2010; Stenholma and Hytti 2014; Taragola et al. 2014; Wilson, Harper, and Darling 2013). Conversely, producer-farmer identity is primarily constructed by local communities and their traditional norms which expect farmers to play a specific role as producers. This producer-identity connects farmers to their farms and the land and shapes their lifestyle throughout their careers (Burton 2004; Stenholma and Hytti 2014).

In fact, once the entrepreneur-identity comes in and seeks legitimacy from local communities while attempting to replace the producer-identity, it threatens the traditional role of farmers and disrupts the existing connections between farmers and their social and physical environment. (Burton 2004; Stenholma and Hytti 2014). In this case, the goal of farming often is to generate profit and conserve the environment more than to maintain the lifestyle and the traditional identity of farmer (Burton 2004). Adopting diversification is expected to cause confusion to farmers as they might be interested in adopting nonconventional practices to generate further income to sustain their farm but also want to preserve their identity. Some farmers are also unable to accept the changes in their roles and lifestyle.

Moreover, in entrepreneur-farmer identity, decisions are often made to serve the interest of firms or corporations, rather than supporting the interest of farm households or local communities and maintaining their social institutions (e.g., social and cultural norms and values) (Stenholma and Hytti 2014). This is the primary factor, as Burton (2004) illustrates, that leads traditional farmers to resist adoption of diversification and

challenge the attempts of entrepreneur-farmer identity to replace producer identity. Some scholars such as Stenholma and Hytti (2014) even argue that farmers, and agriculturalists in general, do not need to seek new customers and engage in nonconventional practices that challenge farmers' existing identity because the farm corporations have already introduced the agricultural products to the global selling markets.

According to McGuire et al. (2015) farmers' attitudes, beliefs, and previous experiences are formed through their interaction with the local social and spatial environment including other farmers, family members, neighbors as well as the place or the land. Also, previous experiences of farmers also play a significant role in the construction of farmers' identity. Addressing farmers' attitudes, values, goals, and motivations is important both in understanding the motivation of producers to diversify and their adoption of conservation practices and best management practices and entrepreneurial culture (Gasson 1973; Ilbery 1983; Willock, Deary, Edwards-Jones, Gibson, McGregor, Sutherland, Dent, Morgan and Grieve 1999; McElwee 2008; Ahlstrom et al.2008; DiGiacomo, King, and Nordquist 2010). It is also important in examining the impact of diversification on producer-farmer identity (Pyysiäinen et al. 2006; Ahnstrom et al. 2008). Attitudes facilitate understanding of the environmental, economic, and social context in which farmers operate[1]. They also determine both the choices that farmers make regarding their business decisions, and the way farmers react to specific strategies that governments introduce to them such as diversification, adoption of entrepreneurial culture, and the best management practices (Ahnstrom et al. 2008;

[1] Considering the notion that farming in North America and other developed countries is predominantly a family managed business and that farmers often transfer their lands and legacy to the next generations, it is important to examine whether adoption of new practices impacts the identity of farmers and the social context in farmers operate their businesses (Hansson, Ferguson, Olofsson, and Rantamäki-Lahtinen 2013; Tylor, Norris, and Howard 1998).

Gasson 1973; Ilbery 1983; Willock et al. 1999; McElwee 2006; McElwee 2008; Ahlstrom et al. 2008; DiGiacomo, King, and Nordquist 2010).

Farmers' attitudes are complex perceptions that include a positive or negative reaction toward what is perceived to be true about an attitude-object such as a person, place, thing, or idea (Willock et al. 1999:287). For instance, farmers' values influence their conservation behavior, their attitudes, and motivation to adopt entrepreneurial culture (Willock et al. 1999). If a farmer perceives his or her activities as a way of life, s/he may conserve the land with a goal of passing it on to future generations. Contrarily, if s/he purely conceives farming as a business, then the person may solely plan to maximize profit without concerns about the sustainability of the land or the intention to pass it on to next generations (Willock et al 1999). Nonetheless, despite the difference in values and beliefs of conventional and unconventional farmers, this statement does not denote that all conventional farmers are unconcerned about the environmental impacts of conventional farming (Sullivan et al. 1996)

Values, as Gasson (1973:521) defines are "instrumental, social, expressive or intrinsic aspects of farming." Unlike attitudes, values are more perpetual and represent frameworks that individuals use to evaluate theirs as well as others' actions. They are properties that are less prone to change with time and situations and are often justified by cause (Gasson 1973). Farmers' values impact their goals and perceived success, because farmers could use their goals and objectives to reflect on their values. In other words, they significantly influence farmers' behavior and determine their success because they embrace meaning for farmers and directly impact farm decisions, choices, strategies, and management practices (Gasson 1973; Parminter and Perkins 1977; Willock et al. 1999;

Lamarque, Meyfroidt, Nettier, Lavorel 2014; Stock and Forney 2014). For instance, farmers' values may determine whether the producer prioritizes the production and profitability of their operation over environmental conservation.

Values are cultural products and include standards, beliefs, and characteristics that a farmer considers significant and tends to uphold (Gasson 1973). They represent the context through which farmers asses their own as well as others' goals, behaviors, attitudes, and activities. Values are not inborn but learned and are ends in themselves (Gasson 1973; Willock et al. 1999; Lamarque, Meyfroidt, Nettier, Lavorel 2014; Stock and Forney 2014). They also reflect farmers' views or judgment about what seems important, bad, good, right, or wrong (Gasson 1973; DiGiacomo et al. 2010). Farmers may reflect on their values and use them to understand their goals and objectives.

Farmers' goals are the outcomes that farmers expect to achieve, or expectations that the person wants to achieve at a certain point in time. They include self-sufficient goals (e.g., growing their own food, developing their competences) and instrumental goals which aim at realizing anticipated goals. Farmers' goals may include short-term as well as long-term goals (Gasson 1973). Also, some goals might be ends in themselves while others might be intermediate to help realize broader goals. For instance, buying land might be itself a goal, it might also be a way to maximize profit. While values may not be very specific, goals are expected to be more contextually specific (Parminter and Perkins 1997). Examining farmers' values and goals helps scholars and policymakers to understand the motivation behind farmers' engagement in certain agricultural activities and their motivation to diversify (Gasson 1973). To achieve their goals, farmers are expected to adhere to the societal norms.

Social norms are expectations that the society places on individuals. Society expects farmers to represent a certain role, and the position of individuals in society determines the way they behave (Stenholma and Hytti 2014). Social norms denote that the way individuals behave in society is based on their social status, which determines the way others expect them to behave. These expectations are known as norms, which are deeply rooted in people's attitudes and beliefs. Norms not only determine how other people expect the individual to behave, but they also determine what behavior the individual conceives as correct. Stenholma and Hytti (2014) state that norms are the core component of producer-farmer identity, and that they influence the way farmers perceive, construct, and reproduce their farm identities. Their statement supports the argument of some scholars that entrepreneur-farmer as a new identity does not adhere to the existing societal norms while seeking legitimacy from the larger society. Although some norms may be external to farmers, they are significantly embedded in how farmers make sense of their farming activities and lifestyle (Stenholma and Hytti 2014).

Also, construction of farm identities is determined by the extent to which the farmer adheres to the norms of societal institutions. Social institutions are informal institutions such as mechanisms of social order that regulate behavior of individuals in society in accordance with rules that are formed by the society and individuals are expected to adhere to (Stenholma and Hytti 2014). However, being an entrepreneur-farmer poses less challenge to the existing societal norms and social institutions of local communities compared to the institutional entrepreneur because farmer entrepreneurs are still somehow associated with their farm culture and environment despite that they think and act as businesspeople. In other words, entrepreneur-farmers still operate within the

agricultural context and their identity remains related to farming, although they might not entirely adhere to the social norms of the agricultural community. Conversely, institutional entrepreneurs often drastically change their business activities. They may change the institutions by creating new institutions or transferring from one to another (Stenholma and Hytti 2014).

In summary, adoption of farming strategies that do not adhere to production-oriented behavior or that fail to consider the social and cultural identity of farmers, their families, and local communities, can lead to implications for farmers regarding their decision to adopt diversification. This situation canincrease resistance among farmers to engage in, or adopt any new techniques and mechanisms of nontraditional farming (Hansson et al.2013).

2.8 The Impact of Farm Diversification on Farmers' Identity

On-farm diversification is a multifunctional agricultural strategy that encourages farmers to shift their operations from traditional to multifunctional, nonconventional agriculture in which farmers are required to fulfill various functions, thus modifying farmers' traditional role and identity (Brandth and Haugen 2011). However, adoption of entrepreneurial culture and multifunctionality does not only alter producers' identity as farmers, but also produces a new identity (entrepreneur-identity) that challenges farmers' old identity (producer identity) (Burton 2004; Stenholma and Hytti 2014). In the context of diversifying, farmers may be, therefore, facing substantial challenges to maintain their traditional role and cultural heritage including their family histories, and the farmland that they have historically been attached to (or have dedicated their lives to) and plan to pass down to the next generations (Fitz-Koch et al.2018; Stenholma and Hytti 2014).

The above context positions farmers in a challenging and contradictory state and undecided role. They find it hard to choose whether to remain in traditional farming and maintain their identity or adopt diversification and be attached to an entrepreneurial identity (Burton 2004). Even farmers who are willing to diversify, and who might view themselves as both traditional and nontraditional farmers, might struggle to find balance between two identities (entrepreneur-identity and producer-identity), along with other identities and categorizations such as gender identity, particularly the argument that farming activities are traditionally controlled by men (Haugen and Brandth 1994; Brandth and Huagen 2011). Fitz-Koch et al. (2018) argue that the degree of diversification may differ as farmers adopt different diversification strategies. For instance, some farmers (usually producer-farmers) may diversify by modifying some aspects of their farm business. Others, mostly entrepreneur-farmers, may entirely switch their farm business to different type of business such as tourism.

Farmers often have strong attachment[2] to their farms and the land, which can have an impact on their lifestyle, daily practices, and decisions they make regarding their operations (Maybery, Crase, and Gullifer 2003). Brandth and Huagen (2011) state that it is easier to get agricultural producers out of farming than it is to get farming out of their identity, which exemplifies the importance of farm identity to producers and the value they place on their operations. Traditionally, identity of farmers is attached to kinships, farmers' interactions with their farms and the land, and the way farmers perceive themselves as well as the way the society perceives them. This includes the tendency and enthusiasm of producers to preserve their individual and family heritage (such as

[2] Values that producers have for their landholding and their appreciation of natural environment in which they operate.

attaching the land to the family name), which determines the nature of opportunities that the farmer pursues (Fitz-Koch at al. 2018). Nonetheless, this should not be interpreted as if farmers do not welcome changes, especially those who take the responsibility after succession. Farmers are willing to update their farming techniques, strategies, and methods to meet the new agricultural changes, but often do not welcome radical changes that affect their identity as farmers (Burton 2004).

Indeed, entrepreneur-identity, the new identity that emerges once farmers engage in entrepreneurial agriculture, challenges producer-identity and seeks legitimacy from the local community without adherence to the informal institutional norms and values of the society. Hence, farmers are confronted with two different and often contradicting identities, although, in some occasions, farmers may combine the two identities such as producer-farmer identity and entrepreneur-farm identity (Stenholma and Hytti 2014). Additionally, producers often operate not solely to acquire economic gains, but also to preserve their social identity which includes lifestyle and a good farmer connotation (McElwee 2006; Stenholma and Hytti 2014). Therefore, it is necessary to note that identity plays a significant role in these decisions (Hanssen et al.2010).

2.9 The Co-Existence of Producer-farmer Identity and Entrepreneur-farmer identity

Some traditional farmers adopt nonconventional practices, yet their primary focus remains on producing agricultural commodities so that they maintain their lifestyle and retain their identity as farmers (Di Domenico and Miller 2012; Sutherland and Darnhofer 2012). Adoption of diversification practices that are related to more traditional farming practices (such as diversifying crop rotation, leasing farm buildings and equipment, and

investing in forestry areas within the farm) facilitates the preservation of farmers' identity and is acceptable to some farmers (Hansson et al. 2013).

Di Domenico and Miller (2012) identified producers whose plan is to retain their identity as farmers but at the same time are willing to adopt diversification and other nonconventional agricultural practices to increase their income and sustain their farms as modifiers. This means that these farmers do not tend to entirely switch their operations and run them as business, they consider themselves farmers and businesspeople. In general, farm identity remains strong regardless of the type of diversification practices that farmers are adopting. They claim that farm entrepreneurship is a type of lifestyle entrepreneurship because entrepreneurship enhances the quality of life of farmers and their families. However, this is true only if the type of entrepreneurship that the farmer has adopted adheres to societal norms without affecting personal and social values of farmers and local communities.

In the last five or six decades, rural and agricultural communities have characterized traditional farmers as good farmers (Di Domenico and Miller 2012), and the conception of playing a good farmer role makes producers proud of their farmer identity. In this context, some producers state that they are often satisfied by the limited income that they generate from traditional farming activities, rather than engaging in nonconventional agriculture, especially off-farm diversified activities (Di Domenico and Miller 2012). However, as the economic pressure on farmers and their families constantly increases, farmers are put in a very complex situation. They have limited options other than adoption of diversification and nontraditional practices. To conquer this challenge, some farmers combine traditional and nontraditional operations and divide the tasks

between the family members. They assign some family members traditional farming practices and have others engage in diversified activities, thus maintaining dual identities (Di Domenico and Miller 2012). They may engage in conventional farming to retain their producer identity and simultaneously practice entrepreneurial agriculture to diversify their income sources (Di Domenico and Miller 2012).

Hansson et al. (2013) suggest that the best strategy to diversify farming operations is to use existing farm-based resources and adopt diversification that has a minimal impact on farmers' identity. For instance, leasing farm buildings and equipment and investing in forestry areas within the farm. This strategy is expected to preserve farmers' values and identity, but to also adhere to societal attitudes and norms (Gasson 1973; Hansson et al. 2013; Hildenbrand and Hennon 2008). In fact, it is possible that traditional and nontraditional farming strategies can concurrently be adopted without possible conflict between the two indicated identities. Farmers might espouse the two strategies which will help them diversify their income sources and preserve their identity as producers. The USDA (2015) defines co-existence of the two types of farming (conventional and nonconventional farming) as adoption of both strategies simultaneously, or the existence of various types of agricultural production at the same time and in the same location while paying attention to preservation of farmers' identity.

Moreover, Fitz-Koch et al. (2018) argue that farmers pursue different strategies based on individual values, attitudes, and goals. For instance, some farmers may combine different identities while others may maintain a single identity, either producer-farmer identity or entrepreneur-farmer identity. In this respect, adopting McGuire, Morton, and Cast's (2013) explanation that farmer's identities are in a hierarchical position and that

as one identity raises the other declines It can be said that as producer-farmer identity is activated, entrepreneur-farmer identity becomes deactivated and vice versa. Farmers can have two identities simultaneously, but as the farmer leans toward producer identity (activated) he/she identifies less as entrepreneur-farmer. It is possible that having different identities can cause conflicting feelings among farmers as to which identity to stick to when it comes to facing the challenge of whether to adopt the entrepreneur identity and increase the profitability of the business or to stick with the producer identity and encounter the challenges of limited financial resources to sustain the farm business (McGuire et al. 2015).

Di Domenico and Miller (2012) dispute the notion that farm diversification as a strategy is exclusively adopted by nonconventional farmers to conserve the environment. They argue that, in some situations, conventional farmers also intend to maintain agricultural and environmental sustainability. Similarly, Sutherland et al. (2016) state that not all UK agricultural producers who adopted diversification are environmentally-oriented farmers. Therefore, the best practices that farmers can adopt without necessarily compromising their producer identity is to engage in the types of on-farm diversification such as crop diversification that pose less threat to their identity as farmers. Farmers are less resistant to on-farm diversification as an adaptation strategy than adopting off-farm diversification, or other types of diversification that might threaten their identities. They tolerate on-farm diversification because, as they perceive, it does not entirely alter their traditional farm practices (Hansson et al. 2013).

Furthermore, Weltin et al. (2017) conclude that nearly all participants in their study perceive less threat from on-farm diversification on their identity than off-farm

diversification. These statements substantiate that although most traditional farmers are in general resistant to farm diversification, they are somehow less threatened by on-farm diversification compared to off farm diversification. To eliminate the tension between producer-farmer and entrepreneur-farmer identities, Stenholma and Hytti (2014) suggest that government, scholars, and agriculturalists can assist farmers and the farming population to join forums in which they can develop their identities, amend them to align with the modern agricultural practices, or even construct new acceptable identities that are more aligned with their existing farm identities. Despite the fact that adoption of diversification (as one of the entrepreneurship principles) poses challenges to the producer-farmer identity, farmers now have more motivation to accept diversification of their farm operations (Zakaria, Shariff, Mahat, Hassan 2005) because of the constant economic challenges that agriculture has experienced during recent decades.

2.10 Conclusion

Farmers today are faced with substantial challenges to make a living and sustain their farm businesses. To overcome these challenges, farmers have been encouraged by governments, scholars, and agriculturalists to adopt diversification and entrepreneurial agriculture. However, adoption of entrepreneurial culture requires managerial and professional skills that some farmers do not possess. But, not only that, farmers experience significant threat of losing their traditional producer identity because of their adoption of nonconventional practices. This means that adoption of diversification may resolve the problem of limited profitability and productivity for farm businesses, however, it can create a significant confusion among some traditional farmers who value their producer identity.

CHAPTER THREE

DIVERSIFICATION INTO WIND FARMING AS FORM OF ON-FARM DIVERSIFICATION: A CASE STUDY

3.1 Introduction

This chapter provides context for an examination of the impact of diversifying into wind farming on producers' identity as farmers. Many rural communities across the US have relied on farming for generations as a primary source of income and as a way of life through which they present themselves and their culture and identity as farmers to the larger society. Agricultural producers consider farming not just an economic activity but also a social and cultural practice in which they interact and socialize with the natural environment and other humans in their communities (Phillips 1998). Thus, farmers, especially family farm operators, might perceive inducement of development activities and advanced technologies that require farmers to entirely shift their operations as a move away from their culture and the role they have represented until recent decades. However, as Delvin (2005) asserts, the acceptance of wind farms might depend on the perceived need of the community to wind energy and the benefits the landowner receives as well as the contribution of wind farm to the local community in the form of tax revenues.

Wind farming is increasingly becoming an on-farm diversification strategy (globally and in the United States) that farmers adopt to increase their sources of income and recover from the constant decline in agricultural revenues (Global Wind Energy Council; Junginger, Faaij, and Turkenburg 2005; Sutherland et al. 2016; Xiarchos and Sandborn 2017). Previous studies examined the impact of wind farm development on

nearby communities, particularly the health and social impacts of wind turbines on communities living nearby, and the reason some communities resist or accept wind farm development in their vicinities (Ashworth and Devine-Wright 2013; Botelho et al.2017; Devine-Wright and Howes 2010). These studies used different theoretical frameworks such as NIMBY (Not In My Back Yard) (Devine-Wright 2005), identity theories and place attachment (Devine-Wright and Howes 2010), and the concept of vertical and horizontal patterns of community (Jacquet and Fergen 2017) to explain the behavior and attitudes of residents towards windfarm projects.

However, there has not been any study in the United States that examines the impact of wind farm (as a form of on-farm diversification) on producers' identity as farmers. This case study examines whether development or installation of wind turbines by energy corporations on farmland as a farm diversification strategy impacts producers' identity as farmers. More specifically, I want to explore whether farmers can retain their identity as farmers after they engage in wind farming. It should be noted that on-farm wind generation is not a new phenomenon as farmers have historically used windmills on farms to produce power to pump water or generate lights (McEowen 2011). The difference, however, is that modern wind turbines that are developed on farms are perceived to be used to diversify farm activities and generate further income and profit to sustain the farms. While farmers may use wind turbines as equivalent to windmills to generate electricity for their farms, most wind farms that are developed on farms today are intended to generate further income (to diversify sources of on-farm income) and energy and increase their financial viability to sustain their farms.

Often, farmers receive annual payments from wind farm companies as a result of leasing their land to these corporation to develop wind turbines (McEowen 2011). This context makes farmers look more like entrepreneurs rather than traditional producers. Also, the way the current on-farm wind turbines use farmlands differs from the way the farmland has historically been used. They are placed on the land and the farmer receives net income that s/she does not put any efforts in it compared to traditional farm activities (McEowen 2011). Typically, the farmer leases his/her land to the wind company and receives net payments making it more of a business opportunity than a regular farming activity. Besides, having several wind turbines on the land could change the beauty and natural scenery of landscape, which would affect the feelings of farmers about their farms and the relationship between them their farmland (McEowen 2011).

The existing literature indicates that farmers' identity plays a notable role in their success and they decisions they make (Burton 2004). Thus, preserving their identity is more important for some farmers than seeking economic returns (Sullivan et al.1996). People with strong place attachment often have negative attitudes toward wind farm development in their neighborhoods (Devine-Wright 2009). This is due to the notion that individuals' attachment to the place forms their place identity. In this respect, some scholars describe adoption of diversification strategies that are not related to traditional farming activities as disruptive to the identity of farmers (Burton 2004; Bailey, Devine-Wright, and Batel 2016; Devine-Wright and Howes 2010).

Vorkinn and Riese (2001) studied the relationship between place attachment of local communities in Norway and the degree to which environmental and human activities that cause physical changes to geographical settings affect the identity of rural

communities. They also observedthe influence of place attachment on residents' attitudes toward their opposition of development projects. Place attachment, as Hernandez et al. (2007) describe, is an emotional bond between humans and the physical environment that they live and work in and interact with others, the environment in which they feel safe, secure, and desire to remain in. Hernandez et al. (2007) describe place identity as an element of personal identity, a process through which individuals interact with their physical environment (places) and use to identify themselves and their affiliations. People may identify themselves based on places that they originally belong to (birthplace) and the length of residence. These physical environments usually form individuals' place identity.

Although place identity and place attachment are often interrelated, they are somewhat different. Individuals may be strongly attached to certain geographical locations where they work and reside, but they may identify or affiliate themselves in relation to locations where they were born and grew up (Hernandez et al.2007). For example, a farmer who lives in town or city may still identify her/himself as a farmer (in attribution to his family and their legacy, the landscape, and lifestyle), although s/he is not currently living on farm. Place attachment and place identity are related to farmer identity. Farmer identity is related to the self (the social process) or social aspect of farming that includes interactions of farmers with the land, farm, and the community where they live and work. It also includes producers' perceptions of who they are, how other people view them, how they want to be seen, and the meaning they assign to their role and these interactions (Stenholma and Hytti 2014).

In addition of the previous discussion on the importance of farmers' identity, I believe that analyzing the intersection between place attachment, place identity, and farmer identity can further understanding of the role of farmer's identity in their decision to diversify and why the impact of on-farm diversification on farmer's identity is significant to producers and scholars. Farmers' attachment to the land and community where they live and operate influences their decisions to adopt on-farm diversification (Maybery, Crase, and Gullifer 2003). Also, farmers' social networks (e.g., kindships, ties, friendships, and peer connections) and sociodemographic characteristics such as farm size, age, gender, and level of education also influence adoption of diversification and the extent to which farmers' identity matters.

I believe wind farm projects not only affect the farmer as an individual and the beauty of the landscape, but also the farm family, friends, and neighbors. They change the landscape scenery and disrupt interactions of farmers with their social and physical environment, because these wind farms could limit wildlife and their habitat, change the beauty of landscape, and create noise if built close to farmers' residence (Delvin 2005; May et al. 2017). In addition, establishing wind farms might cause soil erosion around the areas where wind turbines are installed, especially from the construction of roads that the wind companies use to bring in the wind turbines. The development of wind farms may also disrupt the longstanding relationships between farmers and their neighbors who might not be interested in wind farms, or the location of their lands is not suited to bring in wind turbines. Thus, this form of on-farm diversification will be explored in-depth in this dissertation.

3.2 Conclusion

Scholars such as Devine-Wright and Howes (2010) have examined the impact of wind farm development on rural communities and their place identity. Nonetheless, this case study focuses on the extent to which farmers' adoption of wind energy as form of farm diversification (whether they are owner-operators of wind projects or are simply leasing their lands to wind energy corporations) impacts their identity as farmers. I argue that not only is the individual identity of farmers impacted, but also their social identity (such as the role they play as farmers), lifestyle, and whether they still consider themselves as producers. In fact, South Dakota laws do not allow individuals or families to develop their own wind farms, but instead allow that wind farms only be operated or owned by corporations. In contrast, Minnesota laws permit farmers to own and operate wind turbines. Because of this, this case study only targets farmers in South Dakota (who lease out their lands to wind farm corporations to increase and diversify their income) to examine whether they perceive their identity as farmers as being affected.

CHAPTER FOUR

THEORETICAL FRAMEWORK

4.1 Introduction

This study uses two theoretical frameworks (social identity theory and the socio-ecological systems framework) to understand the how values, goals, and attitudes of farmers impact their decision to diversify and how and to what extent farm diversification and its various contexts (environmental, political, economic, cultural, and social) impact farmers' identity.

4.2 Identity Theory

Social identity theory helps us explain the role of farmers in society, how they perceive themselves, how they want to be viewed, and how they construct their identity. Identity is described as a group of meanings that define both who individuals are, and their role in society (McGuire et al 2015; Stern 2018). In other words, social identity includes how farmers perceive themselves, the way they want to be seen, and how society recognizes them, and most notably, the degree to which their identity and its preservation is important to them. Thus, it is important to understand the way farmers construct their identities and negotiate the meanings behind their daily practices that shape their identities. Exploring the interrelation between the role of farmers, the way their perceive themselves and interpret their daily practices and the way the social views farmers can also help us to understand whether producers' identity as farmers is threatened as a result of their adoption of on-farm diversification. Specifically, whether producers experience challenges to maintain their identity due to adoption of nonconventional practices, and tensions between the two identities (producer-farmer identity and entrepreneur-farmer

identity) (Di Domenico and Miller 2012). Stern (2018) argues that people appreciate when they are well understood by others within their communities. In this context, I theorize that farmers appreciate preservation of their traditional role and identity as farmers, are eager to maintain a positive public image in their communities, and expect society to view them the way they desire. They prefer to preserve the traditional role that they have played in society as farmers. In other words, farmers appreciate when local communities understand and recognize the role they play.

Furthermore, adapting Georg Herbert Mead's concept of the self (Farganis 2004), I hypothesize that that farmers develop their self (which is a social process) through their experiences of farming and by interacting with others from the local community and the physical environment in which they operate. According to Mead, the arisen self can be an object on to itself (Farganis 2004). In this sense, I consider farmers as both objects and subjects to themselves. They are objects from the eyes of local communities and are aware of how the larger society reacts to their actions. In other words, producers use responses of the local community to reflect on themselves and act based their reflections and interpretation of the community's response. As Mead states, the person cannot become a self in a reflexive meaning without being an object to himself (Farganis 2004). More specifically, farmers are concerned with how the local community views them, assigns them social roles, and expects them to act in certain ways and maintain these roles.

I theorize that farmers are subjects when they interpret their roles and the reaction of society to reflect who they are (e.g., the label of "I am a farmer"), and their expectations that the local community sees them the way they view themselves and want

to be seen accordingly. This is a situation that Stern (2018) describes as identity verification. Identity verification occurs when individuals realize that others see them the way they view themselves, that is. The willingness and expectations of farmers that others shall perceive them the way they want verifies their identity.

Furthermore, Erving Goffman's impression management, which demonstrates how individuals' performance varies based on the region and the situation in which they present themselves (frontstage and backstage), can also be used to explain the intent of farmers to maintain their public image (Fagrnis 2004). Performers negotiate and engage in a tacit agreement between themselves (in this case farmers) and the audience (the local community) to act in certain ways. For instance, farmers are in informal agreement with local communities to adhere to the societal norms and maintain certain roles and norms. In return, farmers expect from the local community to recognize them the way they want (e.g., being good farmers) and their role to be well understood and appreciated. By community, I mean not only community as a place but the social (neighbors, friends, the family, professional organizations and networks, etc.) and physical environment (the residence, farm, field, and land) in which farmers live, interact, and share life with others. In this sense, community includes humans and nonhuman species which farmers interact with and share common interests (McGuire et al. 2015; Theodori 2005; Wenger 2000; Walker and Slat 2006). According to Stern (2018), humans spend immense amount of time thinking about how others perceive them, attempting to improve their image, and I trust this applies to farmers.

Stern (2018) categorizes social identities into three types: person identity; role identity; and social identity. Person identity is the way individuals characterize and

distinguish themselves in various contexts but also evaluate how others respond to their actions (McGuire, Morton, and Cast 2013). For instance, when farmers act within their societal context, they carefully monitor how their neighbors think about their identity and role as farmers, especially if they adopt new practices that are not commonly used by other farmers in the community. Role identity refers to the way persons define themselves when performing a certain role in a social context or structure and the way they are expected to be. An example would be how farmers perceive their role or how students and professors in certain universities define themselves using their characteristics (e.g., names, positions, and the role they play in a certain institution) and affiliation. Social identity is social status of individuals and their affiliation to specific groups (Campbell 1997). Individuals often categorize and describe themselves according to various social groups (e.g., religious affiliation, racial and ethnic affiliation, profession and the type of work sector) that they belong to.

As Stets and Burke (2000:224) describe, people identify and categorize themselves according to the certain groups or organizations that they belong to. According to them, social identity is a reflexive process in which people perceive themselves as objects and portray and identify themselves in certain ways that distinguishes them from other social groups (Stets and Burke 2000). For instance, farmers identify themselves as farmers which distinguishes them from other social groups, although they can belong to different social groups at the same time. Asocial group, according to Stets and Burke (2000) is a group of people who share a similar social identity or belong to the same social organization. In this respect, individuals adhere to the norms, values, belief, behaviors, and goals of such groups.

Social norms are unwritten rules that members of society, especially in rural communities, are expected to follow (Burton 2004; Brick, Sherman, and Kim 2017). Stern (2018) argues that any development or change that is brought to local communities needs to adhere to societal norms (prescriptive social norms) of the group, whether it is farm community or the larger public, otherwise, it is expected to be less successful or face resistance (Stern 2018). Prescriptive (junctive) social norms are commonly agreed upon standards (e.g., farming and farmers' role) that are shared by members of a social group, which shape social behavior mostly through social pressure, informal sanctions, or rewards, or through creation or personal behavior.

4.3 Socio-ecological Systems

The second conceptual framework I am using in this study is socio-ecological systems framework, which helps us understand the interaction between farmers, and between farmers and the social and physical environment in which they operate. The physical environment includes the land, farm, animals, and any natural resources that producers use. Adopting the conceptualization of Salihu et al. (2015), which states that interactions between humans and their physical environment are reciprocal and that the level of these interactions is multifaceted, I theorize that, at least, at the individual and family level, South Dakota farmers interact and socialize with the social and physical environment in which they operate and are a part of. Simultaneously, their social and physical environment (which includes friends, family, the land, the farm, and human and nonhuman species) interacts with them and contribute to construction of their identity as farmers (Salihu et al. 2015).

The social and physical environment of farmers influences their attitudes, values, beliefs, norms, and perceptions toward their management of natural resources, including farmers' decisions of land use and preservation of social and ecological systems (Lescourret et al. 2015). Analyzing interactions of the social and ecological environments in which farmers operate also helps us understand relations of farmers and the community in which they live, and interaction of producers with the land, farm, and natural amenities. It also helps us understand the political and cultural contexts in which these interactions occur. Balwin, Smith, and Jacobson (2016) assert that to understand farmers' relation to their land and farms and the way they manage natural resources, it is important to understand the interactions between them and their social environment. In short, using a socio-ecological systems framework helps us to understand the long-term interaction between farmers themselves, and between them and their biophysical environment including the land they operate and the nonhuman species (Stern 2018; Vuillot et al. 2016).

Aldous (1996) argues that farmers operate in a familial context and that family is a social system. She describes the term family as a social system or unit that is formed through interactions of individuals with other members of the family who hold different but interrelated positions (although not universal) such as husband-father, wife-mother, daughter-sister, and son-brother. Aldous (1996) explains describes systems as a causal network of unsustainably interdependent components in a specific timeframe. Her argument echoes the work of Talcott Parsons (1951) "Theory of Social Systems." Parsons (1951) describes social systems as open subsystems that interact with cultural and personality systems (environing systems) and their physical environment. Parsons

(1961) states that social systems are interdependent subsystems, although have boundaries, that each of them must be considered an open system interacting with the environing systems of the larger structure. Also, Sutherland and Darnhofer (2012) assert that farming is a social activity more than an economic task.

In this sense, although Aldous (1996)'s argument of family representing a system may apply to the nuclear family in general, I believe that a farm family as an institution represents a social system. Therefore, farming decisions are often made by the farm family not by individual operators. Farmers are groups of people who cultivate a land to produce certain products to generate income (Aldous 1996; Fitz-Koch et al. 2018; Stenholma and Hytti 2014). They interact with the farm, land, and physical and social environments in which they operate. Moreover, farmers as individuals and groups have historically occupied the land they farm and have been interacting with it, creating a strong bond between them and the social and physical environment, although this has somehow changed as farmland has increasingly operated by nonowners (Stenholma and Hytti 2014; Petrzelka, Sorensen, and Filipiak 2017).

The social and physical environments in which farmers perform and assign meaning to their practices, and use these practices to define who they are, represent their identity. For instance, having a certain lifestyle, caring for others, the land, and habitats and being strongly connected to farmland and natural beauty of their land is considered an identity in the agriculture community. Having the landscape changed and the farmland physical structure altered can affect farmers' feelings about their natural environment. In this sense, farmers are eager to maintain such relations between themselves and their social and physical environments as well as to pass on their land and legacy (which is

also their identity) to the next generations (Aldous 1996; Di Domenico and Miller 2012). Hence, I argue that current trends in agricultural developments and technological advancements that encourage farmers to adopt diversification, especially those which do not adhere to the norms of farm society and threaten farmers' identity, disrupts the social and ecological structure in which farmers operate their business. For instance, the place farmers are attached to, which represents their identity can be disrupted when other business activities (nonconventional agricultural activities) such as buying equipment to lease or building wind turbines on farmlands are incorporated.

4.4 Conclusion

Social identity theory and the socio-ecological systems framework are used in the study to understand the how farm diversification impacts farmers' identity as farmers. For instance, social identity was used to explain how farmers construct their identity (how they view themselves and their role as farmers once they adopt on-farm diversification), and how society views them, especially after engaging in nonconventional practices including on-farm diversification. Besides, the study uses social theory to understand the impact of farm diversification and its various contexts (environmental, political, economic, cultural, and social) impact farmers' identity. Socio-ecological systems theory was used to understand how diversification might impact the interaction of farmers with their social and physical environment.

CHAPTER FIVE

METHODS

5.1 Introduction

This chapter describes the study population, the sampling strategies that used to select participants, the recruitment process, demographic characteristics of participants, the instrument used for data collection as well as the procedures followed for data collection, analysis, and interpretation.

5.2 Research Population

The study population is commodity crop producers and ranchers both east and west of the Missouri River in South Dakota who have engaged in different types of on-farm diversification in the last ten years To be selected, the interviewee had to be 18 years and older and currently operate a farm or ranch in South Dakota. In other words, a farmer who raises crops, livestock, or native grass, or some combination thereof. Furthermore, the interviewee had to be the family member who makes the most management decisions about the operation. In a few cases multiple decision-makers participated in the interviews.

Homogeneity and heterogeneity among the participants were given significant consideration. For instance, in terms of homogeneity, many similarities among the participants have been observed. All respondents are farmers who operate in rural South Dakota raising crops, livestock, or grass, and almost all are white/Caucasian. Only one participant who operates near the South Dakota-Minnesota border was included. As Emerson (2015) states, in qualitative studies that use convenience sampling or snowball

sampling, participants are not only likely to be from the same geographical area, but they might also share similar socioeconomic statuses and ethnicity. Nonetheless, respondents in this study represent different genders (males and females), ages, education levels, and geographical locations within the state of South Dakota (west vs east Missouri River). Also, while all respondents operate farms, they grow different crops and have different livestock, and have different size farms and ownership patterns.

In addition, the study specifically focuses on on-farm-diversification activities that took place in the last ten years. All participants have, at least, adopted some form of on-farm diversification strategy in the last five years. The purpose of choosing the duration of five years is that, according to the South Dakota Public Utilities Commission, most wind farm projects in the state of South Dakota were developed in the last five years. Meaning that most of the wind farm projects that are included in this study were either developed in the last five years or are currently under construction.

5.3 Sampling

I used three nonprobability sampling strategies (purposive sampling, convenience sampling, and snowball sampling) to recruit the study participants. First, I used purposive sampling because each participant needed to meet certain criteria in order to be selected (e.g., I only selected farmers who diversified their operations in the last five years or so to increase their income and profit). Secondly, I used convenience sampling because the participants were selected nonrandomly, it was based on their availability and being reachable. According to Emerson (2015), convenience sampling is a nonprobability sampling method in which individuals who meet the selection criteria are known to the researcher, and in some instances, are also known to other participants. Snowball

sampling is another nonprobability sampling in which respondents or even nonparticipants, in some cases, are asked to refer others to the study (Emerson 2015). Finally, I used snowball sampling to have participants refer others to the study. I also communicated with farmers from across the state during my participants in local conferences (organized by farm organizations) where I distributed flyers and asked farmers and agriculturalists to refer others to the study.

Due to the nature of the current research, there was little possibility to find participants without using snowball sampling in which participants refer others to the study (Mitropolitski 2013). Rural communities in general and farmers in particular intensively use their social connections (Baumgart-Getz et al. 2012), which I believe could impact access to the field and the participants. Also, as it is often common in rural areas, some farmers seem do not trust outsiders (especially the identity of researchers), thus they might hesitate to share their perspectives (Kerstetter 2012). In fact, in some cases, I spent some time at the beginning of the interview to explain and convince the participants (especially landowners who have wind farms on their lands and who were not referred by other farmers) that my research is not funded by any private companies or large corporations, nor is it affiliated to political groups or organizations. Thus, I realized that it was easier for participants to trust me if they were referred to the study by their peers, colleagues, or friends rather than my establishing direct contact with them. In my situation, I believe having participants refer others to the study also seemed to have eased access to the field and helped to establish rapport with participants.

5.4 Participant Recruitment

The initial recruitment was conducted using flyers and posters that had my name and phone number tear-offs on them, and that included a brief description of the research, the purpose of the research and data collection, selection criteria, and my contact information and affiliation as well as my dissertation advisor's (which was used to provide more authenticity to the information in the flyers/posters). The flyers also included information about the length of interview, confidentiality, financial compensation ($50) for each participant for their time, and the statement that participation in the research was voluntary. The steps that will be taken upon their consent to participate such as where to meet the researcher and the autonomy to select the interview location were also included.

The recruitment process took different stages and forms. First, it began with distribution of flyers to the offices of the local farm affiliated organizations such as South Dakota Corn Growers Association, South Dakota University's Extension office in Sioux Falls, and South Dakota Soybean Association. Flyers were also posted at places that farmers frequently visit such as shopping centers and grocery stores in different cities and towns in eastern South Dakota, but I also sent an electronic version of the flyer to representatives of these and other farm organizations across the state. An electronic version of flyers was also emailed to some people who have already participated to circulate it via emails when referring other farmers to the study. Some of them shared electronic versions of the recruitment with others in their personal and/or professional circles or sent them through their member mailing lists. My dissertation advisor and I also emailed flyers to some experts in the area who have contact with farmers, as well as

to members of local organizations such as Natural Resources Conservation Services and asked them to circulate the information. Prior to that, we had also mailed letters to a few farmers who had previously participated in 2018 in a related survey project that my dissertation advisor and I, along other researchers from SDSU, conducted. In this study, we asked participants whether they would be willing to take part in another forthcoming study. Thus, we mailed letters to those who responded affirmatively, but only three individuals called, and only two of them were interviewed.

Second, with the assistance of my dissertation advisor, I went to some local annual conferences and workshops that various groups of farmers across the state have the opportunity to attend. I set up a booth in these conferences and displayed flyers and posters along with a sign-up sheet in which farmers who were interested in the study could sign up their names and contacts. I also distributed flyers to farmers in these events. In these events, I also met with members of farm organizations such as the Natural Resources Conservation Services and South Dakota Soil Health Coalition and asked them to refer farmers who meet the study criteria. Members of these organizations also provided me with handbooks that includes the contact information of different farmers from all over the state. Following each event, I repeatedly contacted producers (via email, phone calls, often left voice messages in some cases, and texting) who had signed up to participate. It is worth indicating that texting was the most effective method to reach out farmers in all situations. Also, although some participants had signed up during these conference and workshops to participate in the study, only a few of them responded to the follow-up phone calls, texts, and emails. About a quarter of participants were recruited from attending these conferences.

The third recruitment strategy included searching internet-based local news that contained information about farmers who have diversified into wind farming. Once the information about these farmers was gathered, I went to the Whitepages and other internet-based platforms (which provide an online phonebook) and searched for contact information such as the phone number or mailing address. However, many phone numbers that I accessed online turned out to be landline numbers (not cellphone) which made it difficult to text the intended individuals because, as I indicated, many participants preferred to better communicate using text messaging. My dissertation advisor would often help me with calling some of these individuals, because some people would just hang up the phone on me once they heard my voice over the phone without even waiting to introduce myself. One of the assumptions is that individuals are increasingly bothered by telemarketers, thus they automatically assumed that it was a telemarketer who was calling. Besides, being a nonnative English speaker, my voice and accent was also a deterrent. This strategy helped me recruit at least seven participants.

The third recruitment strategy also included gathering information about wind farm projects in South Dakota including those that are installed and others that are under construction. One of the leading internet search results led me to the website of the South Dakota Public Utilities Commission (SDPUC) which provides information about the location of wind projects in South Dakota and the names of wind farm companies that own or operate the projects. However, it does not provide the names and contacts of landowners who lease their land to the wind farm companies. After coming across the SDPUC website where I obtained their email contact, I emailed the Vice Chairman of the South Dakota Public Utilities Commission (Kristie Fiegen) and asked about the

landowners whom these wind projects are built on their lands. Her office responded that they do not have contacts of these landowners, but they provided me with the contact of the general manager of one of the wind farm companies in South Dakota. Following that my dissertation advisor and I both contacted the wind farm general manager and asked him if he could provide us with the contacts we needed, and eventually he gave us the names of six landowners.

Nevertheless, despite calling and texting several times, we were unsuccessful to reach out some wind farm landowners. After all the attempts had failed, we (my dissertation advisor and I) decided to mail out printed letters to these producers which we sent along with a $2 bill incentive. We also mailed out printed letter to some farmers that I could not reach via telephone. As a result, we got one participant to call us and indicated that he wanted to participate. Overall, despite the challenges to recruit participants, adopting all the above recruitment strategies helped me to conduct 38 interviews with 41 participants. Some participants were interviewed together, especially those who have partnered to run the farm business together. Also, one interview involved a couple who equally shared their perceptions. As the number of interviews increased, I reached the point where I believe I was not getting new information. The information I was getting from participants was getting repetitive, thus I reached the saturation and ended the interviews.

5.5 Demographic and Farm Operation Characteristics

In total, 38 interviewees were from east of the Missouri River (73.7 percent participants) and west (26.3 percent) were conducted with 41 farmers. Noting that some interviews included two participants, especially in cases where the farm business is

operated in partnership (two farmers operate the same farm) or two members of the farm family (a son and father or a husband and wife) equally provided significant information. Twenty-one were conducted in-person, 16 over the phone, and one via Skype. Furthermore, from the total of 41 participants, 11 respondents engaged in wind farm as a form of farm diversification (or have leased their land to wind farm corporations).

The demographic characteristics of the respondents analyzed in this study include sex, age, education and the and farm operation characteristics include number of acres, geographic location, type of operation (crops, livestock, grass), and the status of land ownership (owner vs renter).

Table 1: Ages of Participants

Age	N	%
18-25	1	2.4
26-35	1	2.4
36-45	15	36.6
46-55	6	14.6
56-65	13	31.8
66-75	2	4.9
76-85	2	4.9
85+	1	2.4
Total	41	100

While close to half of male participants hold bachelor's degree and less than half have attended high school, some college, or hold associate degrees, none of the female participants had less than high bachelor's degree (see Table 4). In fact, about 67 percent of the female participants from a total of four have bachelor's degrees. About 6 percent of the male participants from the total of 25 participants have masters' degrees, while two female participants from total of 6 respondents have master's degrees.

Table 2: Education Level

Education	Male		Female	
	N	%	N	%
High School	3	8.6	0	0
Some college	7	20	0	0
Associates	7	20	0	0
Bachelors	16	45.7	4	66.7
Masters	2	5.7	2	33.3
Total	35	100	6	100

Although many studies have indicated that the farm population in many counties around the world is aging (McElwee 2006), the highest percent of participants in this study are in middle age. In other words, slightly more than third of participants (~37 percent) in this study are aged from 36 to 56, followed by 31 percent aged from 56 to 65, and 14.6 aged from 46-55 respectively. The youngest participant who adopted wind farm diversification is in his late 40s, others are all aged from late 50s to late 80s. In this study, the term old farmer refers to participants who are 51 years and older, while young farmer refers to participants who are between 18 to 50 years old. This definition is based on the average of study population (51). According to Myers, Layne, and Marsh (2009), the average age of the US farmers has increased from 50.3 of age in 1978 to 55.3 years in 2002.

Table 3: Type of Farm Operation

Type of Operation	N	%
Crops	10	24.4
Livestock	9	22
Crops and livestock	21	51.2
Grass	1	2.4
Total	41	100

In terms of the type of operation that participants are engaged in, slightly over a half of participants (52.2 percent) operate a mixed crops and livestock farm, about 25 percent operate just crops, 22 percent exclusively operate livestock, and only 2.4 percent operate grass and contract it (lease it) to ranchers.

Table 4: Acreage Operated

Acreage	**N**	**%**
201-500	5	12.5
501-1000	5	12.5
1001-1500	13	32.5
1500-2000	4	10
2001-3000	5	12.5
3001-5000	2	5
5001-10,000	1	2.5
10,000-15,000	4	10
15,000+	1	2.5
Total	41	100

Although most participants operate farm sizes that are less than 1,500 acres, the most common acreage operated is between 1,000 to 1,500 acres. Nearly all participants provided information about the land they operate including ownership status, while just one participant indicated that he was not willing to share such information.

In terms of the land ownership, about 78 percent of participants indicated that they own and rent the land they operate. From this, most of these farmers own less than half of the land they operate, only about 25 percent own more than they rent. This means that the percentages of rented land among farmers I interviewed who operate both owned and rented land is higher than the owned portion. This is followed by 17 percent of participants who reported that they own the entire land they operate, and only 4.9 (2 participants) percent indicated that they entirely operate rented land.

5.6 In-depth Interviews

Semi-structured, open-ended interviews with 41 farmers were conducted, including 30 interviews with farmers who have diversified into any type of on-farm diversification such as crops diversification, engaging in contracting services, leasing out their farm land, facilities, or equipment to other producers, integrated livestock and crops, raising grass to lease it to other ranchers, etc. Another 11 interviews were conducted with those who have diversified into wind farming or have leased out their lands to wind farm corporations as a form of diversification. The interview questions focused on whether farmers have recently adopted or incorporated any type of on-farm diversification to diversify their income sources and sustain their operation. The interviews also highlighted producers' perceptions about the importance of their identity as farmers and whether they have experienced loss in their identity as farmers due to their engagement in nontraditional on-farm diversification. Furthermore, the questions highlighted whether producers have switched from one type of diversification to another and if they found that the impact of the previous diversification strategy(s) on their identity as farmers was significant.

Participants were asked to provide verbal consent prior to the interview. I explained to them the purpose of the research and the use of the gathered information. I also informed them that they were free to choose not to participate in the study or to skip any questions they felt uncomfortable answering. Additionally, I answered any questions that participants had about the study either prior to or during the interview. Respondents were also be informed that there are no known or identified risks involved because of their participation and that their answers will remain confidential and will be released

only as summaries where their responses or any relevant information will not be identified. Interviews were conducted in locations of participants' choice, or in places where they felt comfortable (Mitropolitski 2015). In other words, it was up to the interviewees to choose the time and location that was comfortable and convenient to them. Most of face-to-face interviews were conducted at participants' houses, a few of them were held at a coffee shop, public library, or restaurants. Interviews lasted 35 to 114 minutes and were all recorded and transcribed with permission from participants.

Field notes were taken during the interviews throughout the study and a digital audio recorder was used to capture the interview (Sutton and Austin 2015). The recorded files were transcribed at the end of each interview. This process was intended to ease the analysis of the data (Dilshad and Latif 2013). Audio recorded interviews were erased once they were transcribed, and all data were maintained on a password secured cloud storage and devices (Easter, Davis, and Henderson 2004). Only myself and my dissertation advisor had access to the data.

5.7 Data Analysis

For data analysis, narrative and content analysis were used (Ansay, Perkins & Nelson 2004). The process of analysis started immediately after the interviews were transcribed (Dilshad & Latif 2013). The early transcription and summarization of the data is expected to help in coding, particularly in sorting out the responses that are similar or repeated. Early review of the interview and the match between files and the field notes is also expected to help organize and transcribe unexpected comments and notes and examine how they relate to the main questions of the research.

Coding started with an initial phase where broad themes were identified (Ansay et al. 2004). My dissertation advisor was given a sample of the data which she coded, and we ran intercoder reliability checks on samples of interviews and codes at various stages in the coding process to make sure that required intercoder agreement was achieved. After this, I discussed the coding with her and checked areas where my coding seemed to mismatch hers. We repeated the process as in the first attempt there was about 50 percent intercoder agreement. Then, my dissertation chair randomly selected other transcripts and codes and ran another intercoder reliability test, we then checked the coding of both and found that we had over 90 percent intercoder agreement (DeCuir-Gunby, Marshall, and McCulloch 2011). Following this stage, I finalized the coding and created a codebook with categories and descriptions of the themes, which explains the meaning of codes in a plain language. The coding also included axial coding as well as selective cording. During the axial and selective coding, I linked the themes that I created during open coding and aligned them with my research question and the theoretical frameworks I use in this study to make better sense of the data and create a conceptual map that explains the findings.

CHAPTER SIX

CHALLENGES PARTICIPANTS FACED AND DIVERSIFICATION PRACTICES THAT THEY ADOPTED TO SOLVE THESE CHALLENGES

6.1 Introduction

This chapter highlights the characteristics of participants, some strategies that South Dakota agricultural producers adopted to engage in farm diversification, and the type of farm diversification that they have adopted. In this respect, the chapter addresses the biggest challenges that farmers in South Dakota are experiencing, on-farm diversification practices that these producers adopted to meet these challenges, and the practices they are expected to adopt in the future. It also includes the main drivers for adopting diversification, the impact of the recent changes in trade policies between the US and other countries, and the role of training, networking, and innovation on farmers' adoption of nonconventional practices. Furthermore, the chapter highlights how interviewees perceive the reactions of community members to the changes they have made and its impact on their role as farmers. The chapter concludes with recommendation of participants for the next generation of farmers.

6.2 Characteristics of Interviewee Farms

Farm characteristics that are examined in this study include the type of land operated (owned or rented), on-farm employment status of the operator (full or part time), whether family members help with work on the operation, and whether the operator works off the farm and the reason for doing so. They also include previous experience of farmers (both on- and off-farm) and their role in adoption of diversification, the type of farm operations that participants are engaged in (crops, livestock, grass, etc.),

partnerships among farmers such as partnering with other family members as well as nonrelative farmers and nonfarmers

Most participants in this study operate a family farm. I adopted the USDA classification of family farms, which defines family farms as farms that are solely family owned and operated by a family whether through partnership or a family corporation. It excludes farm operations that are classified as nonfamily enterprises and farms that are operated by hired managers. It includes land that is operated by a family or rented from a family either by relatives or nonrelatives. In this respect, most participants reported that they are either the second or third generation on the land they operate. Some interviewees purchased the land they own from either their own family members, relatives, friends, private individuals, or tribal entities. Fourteen percent of interviewees own all of the land they operate, 80 percent partially own and rent, and only five percent indicated that they do not own any of the land they operate. Two participants asserted that part of the land they operate is rented from tribal groups.

In terms of the type of farm operated many participants indicated that they operate a combination of livestock and crops. Some operate commodity crops only, and a few either exclusively operate livestock or produce grass. In terms of the length of time they have been operating the land, most of the participants indicated that they worked with their parents since they were young. They frequently assisted their parents then took over the land after they retired. More specifically the majority of participants have been operating the land they farm for the last fifteen years or more.

Regarding the employment status of participants, 50 percent of participants and their spouses exclusively work full-time on their farms, 35 percent work on their farm but

have part-time jobs off the farm, and 15 percent work full-time both on-farm and off-farm. A number of participants also stated that they receive help (with carrying out farm activities in the field) from family members including biological children, parents, spouses, or son/daughter in-laws) who live on or nearby the farm. For example, as this farmer describes, "I do most of the labor, but my dad and mom are still alive, they still live here on the place and they help too" (4M). Another participant states, "my wife works with me and when my son is home from school now, he works on the farm, and it is three of us, and we are pretty much all full-timers." (32M). Having family members helping is significant to participants. It eliminates the need to hire workers and strengthens the family ties and relationship between the family members.

Some farmers, however, expressed concerns that their children who are expected to help with farming do not return to the farm after college. Thus, they employ relatives or nonrelatives to help with farm activities whenever there is a need and depending on the season. "We [him and his brother who is partnering with him] have two other hired people who are helping us out. But it varies, they work part time with us at different times. For example, during busy times combining" (17M). Also, lack of access to land and lack of profitability have led some producers' children to move and live in cities to support their own families because farming is not profitable.

About half of participants work off the farm to generate further income and improve their family livelihood, pay for health insurance, and/or afford the cost of equipment. For young farmers who have just started the business, building assets and purchasing equipment and inputs as well as financially supporting their families can be a

substantial challenge. Thus, without working off the farm, the chances of continuing the operation are rare. For instance, one participant states:

> I have to [work off the farm] because when I started farming, I didn't have any equipment or anything, so I had to keep working and have enough income to buy equipment and…, because I couldn't make any money enough to live just from the farming. If I did not have to work off the farm, I could have done many different things and do whatever it takes to improve my financial situation (15M).

Both he and his spouse are working off the farm to financially support their family, pay for health insurance, and provide tools and equipment for their operation, otherwise they would not be farming today. He continues that because of their off the farm job, they did not experience financial trouble:

> I haven't had any financial troubles because of my full-time job and the fact that my wife also works full-time off the farm. If we didn't have off farm money coming in, I would been in a big financial crisis. Having off-farm job allows me to buy what I need for the farm, and I can buy some inputs that I could not buy without the two of us working off the farm (15M).

While working full-time off the farm has helped him financially, this participant expressed concern that he would do better on farm if he did not have to work off the farm. He asserted that working both on- and off-farm does not allow him to concentrate on managing the farming operation and to adopt practices that require extra time and efforts.

Another participant indicated that she has always worked off-the farm even extra hours sometimes to keep her operation going. Not only her, but also her husband and her son had to work off the farm as well. “I always worked off the farm more than full-time to keep the farm going. Well, my husband was working, I was working, the kids were working” (5F). These farmers argue that due to the increasing decline in crop prices and

the constant increase in input costs, farming does not provide all their financial needs and expenses, thus working off the farm allows them to generate further income to support their families and remain in business. Some of these farmers even state that they would have quit if they were not working off the farm.

6.3 The Role of Partnerships in Farm Businesses

Some participants have partnered with their family members (e.g., children, siblings, or parents) to make their operations more successful. For instance, some of interviewees reported that they run the farm as a family corporation. They collaborate and bring diverse skills and knowledge to the business or seek adequate professional help from various individuals and business partners with different educational backgrounds and skills in different professions. For instance, the following participant (who has partnered with his father and others including his relatives and formed a strong partnership) illustrates:

> I have a business training and I have my Master's in economics. My dad is the crops guy… agronomy. The other partner is the livestock guy, and the fourth guy is a salesman. We have another person who is the CEO. We all have different skills and it works great, really well. Well, and then, and outside that we have got right now we have 15 full time permanent employees (2M).

Forming partnership with younger generations, involving them in decision making, and collaboratively working as a team does not only provide a farm business with unique skills, but it is also a chance to discover new innovative ideas and opportunities and engage in diversification activities that require different skillsets. This idea corresponds to the argument of Fitz-Koch et al. (2018) and Taylor, Norris, and Howard (1998) who

assert that forming partnership with younger generations of farm families enhances the business by bringing new innovations and competences to the operation.

Again, engaging in partnerships helps farmers integrate different skills and help distribute the tasks based on each one's area of expertise, and most importantly, it allows farmers to create further opportunities and operate the farm as a business. "My job is more of taking caring of the machines or equipment and managing the operation and my brother does more of field work" (19M). This also allows producers to adequately assess the current and future directions of their farm business. Recognizing the importance of partnerships and knowing how to communicate, understand each other, generate new innovative ideas, negotiate and come up with a plan on how to implement them and what to adopt or not, all seem to help farmers to advance their business.

> Because we can talk… we can talk through and, I will bring some pretty crazy stuff to the table. I am like, hey, maybe we should look at doing this. You just like you are insane. And he is just like, I understand what you are saying, it kind of makes sense we should do that. But right now, you are crazy. Which is fine, because it brings me back to a level ground of like, Okay, how do we… Okay, this is a crazy idea. Now let's get back to the building blocks and how do we progress to build to that crazy plan, and I think we have a very good relationship. Communication, understanding, and good connections between business partners which are very important part of business success. We are both open-minded (1M).

Participants indicated that it is important to engage young members of farm families in decision making and form partnerships with them in order to bring new skills to the farm and improve the chances of transferring farming to the younger generation, or having younger generations take over the land. "I am telling you, controlling their … [referring to old generations] it is like death sentence role, 85-year-old still making all the decisions" (1M). However, farmers are also aware that there is little possibility for such

partnerships success without proper collaboration and understanding between partners. “That is one of those things where if we didn't get along as well. And if we all weren't open to objectively running our business. I mean, things might be different” (1M). Thus, most participants asserted that being open to new ideas and understanding each other as partners, are the key factors for business success.

Furthermore, education plays an essential role in the success of farm businesses today. Therefore, involving younger generations in decision making brings different skillsets as many young farmers have degrees in higher education, which helps them bring various skills into farming.

> I think education is very important, and just the average age of the farmer and rancher in South Dakota, or in the country in general, is steadily going up because young people are not getting into farming and getting older. So, more younger people involved, I think, would be one determining factor (11M).

Besides, the agricultural community across the US is aging, thus having young farmers collaborating with old generations energizes the business.

It is also important to form partnerships with other farmers, friends, web designers, and internet companies, but also the consumers. Some participants even partnered with nonfarmers to enhance marketing opportunities such as creating internet-based marketing and having individuals with knowledge of technological services (e.g., designing websites and posting photos) to help run the online marketing for a farm business. One participant shared another strategy in which he is partnering with product marketing companies such as meat companies. “We are partnering with a meat company on the internet, and we are retaining ownership of animals and until they are sold on the internet to capture that extra money from the retail prices” (24M). As this participant

further explains, they have formed a strategic partnership with an existing internet firm to help them sell their products:

> We formed a strategic partnership with an existing internet firm or website that specializes in grass fed, holistically managed meat, and they sell beef, bison, venison, elk, and other things. So, strategic partnership is what it is. And then, we have an agreement to sell our animals through that website. So, they can help with marketing, all the distributing and packaging, and then we get a premium for animals (24M).

This participant reiterated that he and his family are planning to focus on direct and local marketing either currently or in the long run. Thus, forming strategic partnerships with internet marketing companies and having consumers directly purchasing the products from the farm seem to be the focus of some farmers in the future.

Creating partnerships with online marketing firms seems to be an effective strategy to some participants. It is expected to pay off well for the farmer although it involves some challenges. The farmer needs to meet certain requirements of the marketing companies. "It is kind of like a forward contract, there are conditions we need to meet in the contract. Our bison and cows have to be 100 percent certified grass-fed. They have to be free of antibiotics, they have to be humanely raised" (24M).

In summary, engaging partnerships with family members, building strong social networks, collaborating with online marketing firms, and using the available technology such as social media enables farmers to increase the profit. "We need to make ourselves better marketers, we probably need to develop a ranch website for you some social media tools like Facebook and some of those things to expose ourselves to the people that are interested in our product (11M). Thus, being familiar with social media, using digital cameras to take snap pictures and upload them to the internet, and learning how to

advertise well, are types of business skills that some participants believe are essential in today's farming business.

6.4 The Biggest Challenges that South Dakota Farmers are Facing Today

Participants listed several challenges that they face to operating a farm today. The most frequently reported challenges are the economic challenges (mbalance between iInput cost and therReturns, increasing debt, marketing, access to labor, land acquisition), uncertainty and risk-taking, health insurance and access to health care, the weather, balancing between profit and environmental conservation, changing habits or mindset, and an aging farmer population.

6.4.*1 Economic Challenges*

The most significant economic challenges participants have faced include imbalance between the input costs and the returns (market prices) and the lack of financial resources to support the family and sustain the farm, increasing debt, and access to the market (this includes challenges to finding direct marketing, limited local markets for small grains, high costs of shipping and transportation, the lack of access to equipment, and the lack of marketing skills – particularly skills that are related to the internet marketing), access to labor, and land acquisition.

6.4.1.1 Imbalance between Input Cost and the Returns

Many participants reported that the imbalance between input costs and the returns, (which is a consequence of the constant decline in crop prices and increase in input costs) is a significant challenge to farmers in South Dakota. As one farmer describes, "the biggest challenges as of now are the prices, crop prices. The price of grain such as corn and soybeans and stuff like that. The prices of grain are way down and that is the reason

we are diversifying into wheat, oats, and even dry beans so that we do not rely on producing grains only" (12M). Another farmer states that "the input cost is just escalating faster than the income. Fossil fuels are costing more, and so then we started backing out and then the yields started dropping too, because we weren't getting enough organic matter back in the soil" (7M). Some participants have attributed the decline in crop prices to the increasing challenge to improve soil quality, which further complicates the land profitability.

These participants expressed frustration about the growing decline of profitability that limits the ability of famers to financially support their families and to retain their children and young generations on the farm. The majority of young generations in rural areas, particularly those from farm families are unwilling to return to the farm and live with their parents. According to McElwee (2006), the farming population is aging, and few young members of farm families are expected to return to the farm. Oftentimes, it is because of the inability of farmers to generate adequate income to support the whole family, especially if the young members of the farm family have their own families to support.

> My older son is trying to take over the place, but there is not enough money here to support his family. The land is not producing enough money to support a family. Farming does not provide enough to support the family, so the young generations and their families cannot sacrifice their lives to work on farm. It is too much stress with less profit. We tried many crops and grazing too but it does not work out (7M).

This participant explains that he is willing to have his children remain on the farm even after they are married. However, due to the lack of profitability, he has advised them to move a city with their families and find jobs that can help them support their families. He

stated that he does not want his children to sacrifice by staying on the farm while there are not enough revenues to support their families.

> Probably, the biggest challenges are labor, the declining prices [crop prices], and then the price of land still going up and coming down to match it. Well, the thing about, like now, now in order to be really, really efficient, and in order to really get…, to make the narrow margins that are possible by farming, you have to farm a lot of acres, a lot of acres. And that means that it also requires a lot of capital because it requires a lot of equipment (37M).

Some farmers have increased their production by acquiring more land and having better yields which helps them to reduce the imbalance between the ongoing decline in crop prices and increase in input costs.

6.4.1.2 Increasing Debt

Moreover, some participants argue that running a large operation and expanding the land, does not mean generating more money. They assert that farmers with large operations often take on large amounts of debt. This means resolving one problem but creating another. Sometimes the large farm operators might be more profitable than small farmers, but oftentimes, they end up taking on more debt.

> I don't think they [large farm operators] make more money. They engage in more debt. So, I don't know if they make more money, they just make more debt. Yeah, no, I don't think that the bigger your farm is, actually makes you have more money. I mean, sometimes it does, but sometimes it doesn't. But first, you have to borrow a lot of money to get big too. Yeah, and they have the same problem, I mean whether it is crop producers or ranchers. They all want to expand but do not realize that they are increasing their debt (M37).

Participants reported that many farmers have increasing debt because of increasing land prices, increasing input costs, and a decrease in returns. Farmers are involved in excessive debt to the extent that it poses a challenge to make profit. In other words, the main reason farmers are taking on more debt is the lack of financial resources which

hinders their ability to purchase the needed equipment and other inputs. As this farmer states “I only buy what equipment I can afford. I don't take loans out and try to keep the interest rate low” (15M). Thus, the lack of financial resources and the fear of accepting or seeking loan with high interest rate is one of the economic challenges that farmers are frustrated with.

6.4.1.3 Marketing

Some producers assert that the market is controlling them and limiting their chances to economically succeed. In this respect, one participant described farming as gambling, he illustrated that when farmers buy inputs, they have little or no autonomy to negotiate the price because the market is who sets the price.

> As far as farming, we buy our inputs, seed or fertilizer, fuel, that stuff. We really don't have a chance to negotiate too much for prices. Just try and buy when we think the price is the lowest for some of those things. And then, at the other end when we sell, we try to sell when the price of the grain is the highest. And so, it is a big gamble, but I guess that is something [farming] that I chose to do (32M).

Farmers argue that when it comes to selling their products, they have no control over the price unlike the companies that they buy their inputs from, thus they try to sell their products when the prices are high. Moreover, according to participants, some of challenges they are facing today include the increasing cost of shipping and transportation, the lack of access to equipment, access to markets (e.g., finding direct marketing, limited local markets for small grains), and their limited marketing (particularly skills that are related to the internet marketing) as well as communication skills.

> Our biggest challenge is the direct marketing of our products and communication. There are people out there that want a grass-fed lamb for consumption as healthy as have been raised sustainably but they don't know that we exist. So, it is telling

> our story people that we know that have been eating our lambs and we ask that you have friends or families that are interested in it. So, it has taken us five years to grow from one lamb to ten lamb a year and now we have learnt things too (10M).

Limited access to markets and inability to sell their products is one of the challenges that farmers are facing today. In this respect, participants indicated that farmers need to have different skillsets such as management, marketing, and communication skills that can help them disseminate information, tell their story to the public, and negotiate with landlords (when relevant). "As a farmer, you still kind of be a part-time agronomist, you have to have pretty good decent marketing skills, and then you have got to be pretty good. I mean, you also got to relate to a lot of different people like the landlord and employees those we hire frequently" (19M). These skills are necessary but hard to be found all in a single farmer. Thus, some participants suggested partnering with others and combining different skillsets.

6.4.1.4 Access to Labor

Access to labor is one of the major challenges that most participants reportedly experience today. They stated that farmers in South Dakota are facing difficulty finding individuals who can help with farming, or even pay employees adequately. They indicated that many young members of farm families who can help their parents with farming are less interested in farming, thus they do not return to the farm. Some participants attributed that to the fact that the farm family is unable to generate adequate income and profit. Thus, the children observe the challenges and prefer not to stay on the farm. Concurrently, due to the constant increase in input cost and lack of opportunities to increase their profit, participants asserted that it is difficult to provide adequate financial resources to hire workers. "Finding labor is one of the biggest challenges, and also the

financial part of it [farming] because of the increase in input costs and decline in the amount of returns" (28M). Also, as this participant describes their concerns in more detail:

> Well, I think right now what I have to say is the difficulty to find workers. This past summer, I had a migrant worker from Mexico who worked for me and I had another guy who worked for me for several years, but right now I do not have anybody helping me…so it is just really hard to find employees that are willing to show up and work for you, so that is one pretty major difficulty (11M).

According to him, in the past, he used to be able to hire individuals who could help with the operation, including temporary of seasonal workers but currently it is becoming challenging to find help.

6.4.1.5 Land Acquisition

According to participants, land acquisition is a significant challenge to South Dakota farmers. They asserted that the lack of profitability has encouraged many farmers to expand their operations so that they can produce more and increase their income and profit. "I think the biggest challenge is the financial side of things. To operate is very, very expensive. Interest rates are rising. And unless you have a large land base that is paid for, or a lot of assets that are paid for, it is very tough to, to make to make a living" (16M). However, expanding the amount of land operated has caused excessive increase in the land prices which has made it difficult to purchase land. "Access to land is a big problem, land prices keep increasing very fast. The cost of the land is out of hands. I would say that land prices are more than what your produce in agriculture, whether you are renting or buying" (24M). Individuals who buy the land are only those who have large amount of capital. In other words, farmers with large operations are expected to produce more and compete better, compared to small farmers. This constitutes an

incredible challenge to farmers with small operations. The crop yields have been improved the in last few years, however, which might help some farmers recover from the loss of revenues due to the continuous decline in crop prices.

> In the last couple of years, the commodity prices have been to the point where it is really a challenge to squeeze out a profit. One thing that has probably, should I say, been a lifeline is that our yields have been very respectable. And that is covered up for some of the low prices that we are dealing with. But that is kind of a catch 22, because everybody else is producing so much that our country is getting saturated with corn and soybeans. So, just too much and you are fighting that glut of production. So, then you try and overcome it by producing more and this just gets to be more and more (38M).

Nonetheless, as yields improve most farmers are producing more which creates the problem of imbalance between supply and demand. Besides, the cost of production increases, "yeah, it yields twice as much, but the math doesn't always work, as far as making a return. Yes, we raise a lot of better crops, but we spend a lot of money doing it. It takes a lot of cash" (14M), which does not help farmers to balance between the input costs and the returns.

6.4.2 Uncertainty and Risk Taking

Uncertainty and risk taking with regards to transformation to nonconventional farming has been reported as one of the big challenges for farming businesses in South Dakota. Participants asserted that several issues contribute to the increasing uncertainty among farmers who are willing to adopt nonconventional practices. For instance, lack of knowledge about new practices, reaction of community members, and fear of failure affect farmers' decision to adopt diversification.

> I would say the biggest challenge today is implementing the changes we have made and to shift our paradigm from production agriculture model to more of regenerate type of model. And there is not a lot of that going on. Our neighbors

> are not doing anything like this. So, it is a challenge to make sure that you are still going down the right path environmentally and that you are profitable (12M).

Being uncertain about the fate of their business in the following years and understanding that some changes are sometimes unsuccessful, farmers may halt adoption of nonconventional practices. “Some changes we made to increase our profit were not successful, so we stop doing so” (21M).

6.4.3 Health Insurance and Access to Healthcare

Access to health insurance is a significant challenge to agricultural producers nationwide (Zheng and Zimmer 2008). In fact, many participants indicated that they experience challenges to access affordable insurance to the extent that they and their families need to work off the farm to provide health insurance for themselves and their families. “Although we both work off the farm, it is just hard to be able to pay for the cost of inputs and health insurance too. Health insurance is the killer for us” (16M). The increasing cost of health insurance and the fact that, currently, there are limited health insurance companies that provide farmers with healthcare needs, frustrates some participants. According to this participant, most of health insurance companies have quitted providing health care services to farmers.

> I don’t know if there are only one or two companies left in South Dakota that sell health insurance. I know there is some companies that try to pool farmers together so they can get a group rate as a company to get a group rate. However, the problem is that those farmers are quite independent and don’t like being controlled or put in a box. Every farmer wants to do things their own way so that is a problem in general, but our health insurance has gone up substantially and that’s one of the things people in town don’t understand. I mean you have a job in Daktronics or 3M or whatever and your health insurance is covered, you pay $100 a month or something like that. And our insurance is $1,400 a month, it’s about $20,000 a year straight up (3M).

This participant asserts that there have been efforts made among farmers in some areas to collaborate and establish healthcare firms that can support them but there is seems to be limited collaboration between farmers in this aspect.

Another participant adds that, for him, the biggest trade-off he makes is having his spouse work off the farm to afford for health insurance. Or in some cases, having the husband work both on-and off-farm to generate extra income to supplement their financial resources. However, although he is frustrated about the cost of health insurance and trade-off he and his family make to stay in farming, he is more concerned about the fate of the young farmers, in this aspect.

> The biggest tradeoff is having the wife working in town just to pay for the health insurance, that is a biggie if you can get. It is tough for us, not for us now at our age, but the younger people it is hard to get decent coverage for health insurance without paying most of your income land insurance. So, a lot of times the wife works again, or the husband might have an off the farm job. Just basically, just lot of times, they just work for the health insurance. Yeah, I feel sorry for them, they have to get kids, do babysitter, daycare or whatever and they hustle off the work and they get back home and their school activities (31M).

Indeed, this participant indicates that most of the time, young farmers work off the farm solely to afford for health insurance. “I couldn't be on the farm fulltime because that is another challenge and I am sure we had that discussion. For both of us to be here fulltime without health insurance, without benefits, it would add an additional challenge, it would add an additional stress to the end” (26M).

Participants stated that working off the farm to cover living expenses and to pay health insurance affects farmers who are willing to diversify but they do not have enough time to manage different activities on farm while working full time off the farm.

"Another factor that limits my adoption of new changes is that I have to work full-time off the farm to make a living. I wish I could go the other way where I could get out of my full-time job and just farm" (3M). Working full time off the farm can challenge the ability of farmers to focus on new practices.

6.4.4 The Weather

According to participants, weather conditions have changed in the last few years, thus making the farming business more challenging. Especially, adding it to the ongoing economic challenges that agricultural producers are facing. "Well, I would say the biggest challenge here is the weather which we can't do anything about. We do not irrigate; we are all dryland. We had some very dry years for a couple of years. It has been tough in the last few years" (33M). Also, due to the dry seasons in the last few years, one participant stated that "we leased out half of our cows and we did that mostly because it was dry in 2015 and 2016" (13M). Because of the dry seasons, they could not provide food to their livestock.

Another participant stated that excessive rains and flooding in the last few years had made it challenging to their operation. Their planted cropland has been affected, especially in areas that are close to the river. The excessive rains and flooding had wiped out the planted crops to the extent they had to adjust their plans and adopt new crops that can be less impacted.

> The river bottom seems to flood quite frequently, so we had to try to adopt new crops and find something that we can make some money on. So, we were done with our planting on Friday and the river bottom just got flooded Tuesday and wiped out all our crops, and we lost all we planted. It has been three times and got our cover crop planted and we lost that too. It seems like we get more water and when we do get it, it comes faster (4M).

Some participants believe that the weather is changing more frequently than in the past. As the following participant also stated, because of the weather changing frequently, they are changing their calving months.

> The same number of cows we probably think about this, probably four years started changing caving season, I was raising traditional calves in March, but then the weather, hail, winter and slowly changing calving in April and May, to change out and I needed my hay (5M)

According to this participant, in the past, they used to calve in March but current they are calving in April because of the weather conditions.

6.4.5 Balancing between Profit and Environmental Conservation

Adopting environmental conservation practices and simultaneously maintaining the economic sustainability of farming is a challenge to some farmers. "People [farmers] are trying to improve their soil. Having a good soil. But trying to balance between making profit and keeping the soil healthy is one of the big challenges. Soil health is something that many people have put a lot of momentum behind it" (19M). Besides, limited knowledge of new practices that can improve soil health represents a challenge to South Dakota farmers.

6.4.6 Changing Habits or Mindset

In addition, participants indicated that changing the old mindset such as getting convinced about the need to transform to nonconventional farming is a major challenge to some farmers. Some farmers are used to their traditional practices and find it difficult move to nontraditional farming. For instance, as this participant illustrates, "the mindset change, I mean how can people move from traditional to nontraditional farming?" (28M). Another farmer states:

> Changing mindset is the biggest, huge dragger to anybody, because if you think that it is not going to work, it is not going to work. If you think that is going to work, you are going to make it work for you. So, I think the biggest setback right now in agriculture is just our human minds. The determination to go forward (27M).

Being used to certain practices can make it hard for farmers to transition to nonconventional practices. Thus, changing the mindset or the habit of being used to certain practices is a challenge. Also, farming is a social process, and farmers have attachment to certain practices, thus, to transition to new practices might require quite a bit of time.

6.4.7 Aging Farmer Population

Participants expressed concerns about the future of farming as a sizable part of the farming population is increasingly aging while there is less possibility of having younger generations of farmers take over the land. "With the aging population of the average farmer and rancher of 60 years old, then it is got to be a problem in the in the next ten years. We have to seriously address it, so who is going to own the rest of this property in the next ten to twenty years?" (20M). This resembles the prediction that the US farming population is expected to gradually decline in the next few years as a result of the increasing aging population and the lack of young people taking over farmlands (Earth Talk 2012).

6.5 Diversification Activities that South Dakota Farmers have Adopted

Participants described different diversification and nonconventional practices that they have adopted to increase their income and profit and to sustain their farm economically and environmentally. These include creating a value-added program such as feeding low-quality crops to livestock instead of selling them, adopting conservation

practices to reduce the input costs, engaged in contracting services, and hiring marketing companies to help with selling crops.

6.5.1 Created a Value-Added Program

Furthermore, some farmers (e.g., those with crops and livestock) have created a value-added program in which they feed low-quality crops such as corn stock to livestock instead of selling them for low prices. Doing so, reduces the cost of feeding cows other stock such as alfalfa.

> One of our purposes is to value-add as much as possible so that we do not rely totally on the market. So, we create those markets as best as we can. We had to do that to value-add through the whole operation and the least possible program which will be marketable about 4000 bulls a year so that is our best way of doing that. The only crop that we are subject directly to the market is soybeans, they are the only options we have. But frankly, it's not our only option, we could feed them to cows if market economic trade or trade issues. It actually makes sense for us to feed the cow (1M).

Another farmer adds that in the past, they used to throw away the low-quality crops that were not sellable or failed to pass certain market quality standards. However, as the increase in input costs persisted, they realized that feeding those low-quality crops to livestock reduces the cost of producing grass or hay that are fed to livestock. In this case, farmers produce less grass and hay, which means using less inputs.

> One thing that we are doing now to increase our income is bailing corn stock, which we haven't done it before. Probably ten years ago we did not do that. We do corn stock bails; we dry them and then they become the mainstay of our livestock diet (14M).

Some participants have further diversified their crops in the last five years (e.g., adding small grain) and integrated more livestock (besides cattle) such as sheep and goats. They also diversified livestock feed, added hay, and added cover crops to use them as pasture for grazing. Some operators completely switched from grain (corn, soybeans, wheat) to

small grain (e.g., oats, millet, milo) so that they can use the small grain for grazing and have diverse options in the market. They state that doing so is not only economically beneficial but also environmentally beneficial.

6.5.2 Adopted Conservation Practices to Reduce the Input Cost

A few participants indicated that they have adopted conservation practices such as no-till, cover crops, and forage crops to produce grass and feed it to livestock in winter seasons, instead of buying hay, thus reduce the input costs associated with livestock feed. First, planting cover crops and forage crops to graze livestock reduces the cost of purchasing and producing hay and other feeding materials that producers used to grow or purchase.

> I used to just grow corn and soybeans and a little bit alfalfa, but then I added oats and winter wheat to give me a chance to grow a cover crop so I can graze the cows on the cover crop after the grass in the pastures is done growing so in the late fall, early winter, and it can save me on hay, so it saves me money (15M).

Adopting conservation practices, especially planting cover crops and small grain, or forage crops is a strategy that many interviewees described as a new on-farm diversification strategy that is expected to promote both the financial stability of the farm and conserve the environment.

Secondly, by grazing the field using livestock (releasing them on the land), they produce manure (e.g., cow manure), which brings back organic matter to the soil, thus reduces the cost of chemical fertilizers and simultaneously improves the soil.

> It allows us to utilize the manure off that operation and put it back in the farming operation so that we can improve our soil. You can do the same thing, you can buy N, P, and K [nitrogen, phosphorus, and potassium] at the elevator and have it spread, but there is something about manure that

> always, you can put the same amount on but you are going to get a better crop with manure than if it was buying commercial fertilizers (37M).

As the cost of inputs such as fertilizers are constantly increasing, using animal manure is not only good for the soil, but also helps farmers reduce the cost of inputs and save a significant amount of money. Furthermore, some farmers have diversified into peas and forage seeds while engaging in contracting services with the seed companies to sell the seed and peas that they grow. “We have added peas, which it’s been quite six or seven years that we have been growing peas and forage seeds for a seed company. We grew other yellow peas, forage seeds in the last couple of years” (21M). Moreover, the following farmers describe how diversifying into cover crops has helped their operations.

> The cover crops have diversified the operation so that we can actually get better utilization and it did. We are actually gaining so that we are not buying as much hay, or rye or having to put up as much hay because we are getting more grazing for the cattle. So, the cover crops are actually diversified the operation so now that we are more efficient and getting better utilization, and it is also healthier for the ground (23M).

Diversifying into cover crops has helped farmers to better utilize the pasture and increase natural manure on their lands. Using cover crops helps better integrate crops and livestock. For example, adding livestock has made it easier for some farmers to grow wheat because they could incorporate cover crops. “We are trying to incorporate the sheep in the cattle together, so that we can better utilize the grass and the other things that are growing because they don't need the same things” (37M). This participant indicated that they first release cows to the field, then follow with sheep or goats who pick up the leftover grass.

> [Integrating sheep] has really helped our farm. It just brings in extra money during the years, when you sell sheep is normally a time when the cow prices are either high or it isn’t the time that your sell cows, like in

> summer. And the sheep kind of do the same thing like cover crops, because they actually diversify the operation because yeah, we are selling sheep in the summer when there isn't any cattle to. The cattle are all sold in the fall or spring. And it is the same thing with the pigs because basically, and the pigs even more did that because when you are custom feeding you get paid every month (37M).

The purpose of integrating different livestock such as goats, sheep, and cattle is to help better use the pasture but also to diversify the income sources. Having different livestock and crops means that the farmers can sell products at different times of the year, especially when the price of some products are low, they can sell the other product(s). The above farmer indicates that even if they did not generate enough profit from the integrated sheep and crops, they still save money by preserving hay and using cover crops.

Integrating crops and different livestock generates substantial benefits to farmers. As this participants states "we have definitely seen a big price decrease in the grain, but the livestock is doing great, the cattle and the sheep are doing awesome. So, I have been expanding the cattle in the sheep side. I am not super interested in expanding the crop side" (28M). Integration of cover crops and different livestock has led some farmers to prioritize the development of livestock business over crop production.

Furthermore, some participants have converted their cropland back into native grassland for grazing to improve the soil health. Others have started growing more grass to feed the cattle in winter rather than feeding hay, which reduces input costs and improves the soil.

6.5.3 Engaged in Contracting Services

Some South Dakota farmers have engaged in contracting services. According to

participants, this type of business may take different forms. The first type of contracting services involves situations in which farmers sign a contract with a buyer (often companies) and based upon it, the farmer produces the crops or livestock to certain standards.

> They pay good if the product passes the testing rate, they pay premium. It involves a lot of work, but the payment is much better than producing grain crops such as corn and soybeans. It is also healthy product because you do not spray or put chemicals on the plant. You are required to spray certain chemicals with certain amounts. If it doesn't meet the certain conditions, they won't buy it. (15M).

Similarly, growing specialty soybeans for oleic oil involves contracting with oleic oil production companies and producing the crop with certain quality and quantity. In other words, farmers engage in a contract with the companies that produce oleic oil and follow the specific standards that production of this type of soybeans requires, as the following participants explains:

> By growing some specialty soybean crops that have to be when you harvest them to keep them segregated. So, they are commingled to keep them 100% pure. And that goes for a specific soybean oil for healthy…, it is called oleic which is low in trans fats. And as far as the soybean oil, it is for frying, it is much healthier than just food regular soybean oil. So, we diversified into growing these beans. It is a little more work but then it gives me the me the opportunity for a little more income (33M).

Although this type of contacting requires substantial attention to the way the crop is produced and involves more work, interviewees indicated that it helps them generate further income by getting paid a premium. Some participants asserted that it involves uncertainty or even risk because it is the first time for them to produce such crops.

The second type of contracting service is referred to as custom feeding. In this contracting service, the producer forms a partnership with the livestock owner (individual or a company) and both parties sign a contract which upon it they act. For instance, some

farmers engage in a contracting service with the cattle owners and have them release their cattle to the pastureland or corn stock, then get paid per head each day by the owner of livestock. Other farmers engage in contracts with cattle owners and take in their cattle for the whole summer season then return them in early fall. The cattle owner is not involved in the work during the entire summer unless there is emergency. "They are not my cattle. He [the cattle owner] pays me to bring his cattle on and manage his cattle from May until November" (22F). The cattle owners pay for the entire season including the service, food, water, etc. One participant explains that she takes care of everything during this season, and there are only a few exceptional cases in which the owner of livestock is involved.

> I take care of everything except veterinary care… he will… if there is a sick cow, I call him, and he sends that cow over if he wants to check the cows. He brings the veterinarian in, we round them up get, them in and they are checked. So, in that respect, I don't rent my land out I bring his cattle on and he pays me a fee to take care of them (22F).

When asked about the motive behind her engagement in this business, she indicated that she wants to improve the soil health. "My goal is to use his cattle to manage my grassland, but I do it in such a high-quality way that his cattle put on more weight than if he just rented pasture from someone, because I have more high-quality grass." (22F). According to the participant, engaging in such business secures her a payment for the entire summer season. She stated that, it is also beneficial to the cattle owner, not having to take care of his cattle throughout the summer while they also put on extra weight.

Furthermore, this contracting service also includes custom feeding for livestock companies such as pig production and processing firms. For example, the two parties engage in a contract upon which the farmer allows the company to build pig barns on his/her land. S/he hosts the pigs, feeds, and takes care of them throughout the year, and

the company pays him/her monthly for the service. More specifically, the company personnel come to the farmer and asks him/her to host their livestock on his/her farmland and provide them with food, water, and care. Then based on the agreement, the company provides certain amount of money that is paid monthly as cash.

> We have always had cattle and then we came to the point where we had to do something if we were going to stay on the farm, and that is how we got into the pig barns, and that has helped. We have a contract; the company owns the pigs and the buildings and everything and then they bring the pigs in and the feed and then we just do the labor and they pay us. They pay us so much a pig space. So, we get a check every month. So, at the time when we did it, we were probably even more strapped. So, we don't have to come up with the capital to own the pigs, we don't have to come up with the money to pay the feed bill for six months, until there are pigs to sell. And actually, we got paid every month up until then (37M).

In this type of contract, the farm family that hosts the livestock has no input costs, it received a fixed amount of income like a company employee.

Although the indicated two contracting services provide the farmers with a chance to increase their profit and sustain their farm, the second contracting service involves less uncertainty and risk because the producer is not concerned with whether he is going to receive the premium as expected or not. The farmer signs a contract with a company that owns the livestock and takes care of the livestock on his land and provides them with food, water, and any necessary needs except veterinary services. Then, based on that, he/she (the producer) receives a monthly fixed amount of cash. Contrarily, in the first type of contracting service, the producer is uncertain whether the product would meet the criteria the two contracting parties have set which based on it the farmer gets paid the premium.

The third type of contracting service is referred as custom work. It is a type of contracting service in which producers either lease their equipment to other farmers or

use them to work for other farmers and get paid in cash. Interviewees indicated that engaging in custom work has helped them to generate further income to support their families and sustain their businesses.

> I do a lot of custom work for, so I do some custom planting and custom harvesting in summer as well. We harvest winter wheat, sunflowers for others. We have got three combines, so we do a lot of custom work. We got two of them and as we figured out that custom work generate cash for us, we used the money we get from custom work and bought the third combine. Because I sold the land that I used to grow corn and soybeans on it. I had equipment and instead of selling them I thought of leasing them or using them to do custom work. So, it pays out much better. The money we make for doing custom work also helps to repair the equipment (20M).

Participants explained that doing custom work provided them with resources they needed in tough situations. Farmers can use the money they generate from custom work to fix their machinery or even buy new ones that are equipped with advanced technology. Custom work, according to participants, can provide various benefits to the contractor or the individual who carries out the work. As the following participant asserted, it has helped him diversify his income and be fully employed during the summer when he has less work to do on his own operation.

> Doing custom work helps me make good money, especially the machines have the latest technology which is expensive and farmers in the areas are not able to buy it. Doing custom work has too benefits for me, it helps me diversify my income, but also to some extent it helps me to be fully employed, there are times of the year that I am less employed. So, it is kind of strategically using my time, equipment, and resources to make extra money so that I can continue my operation in the future (29M).

According to the above participant, engaging in custom work helps farmers use their time wisely in times of the year when producers have less work on their own operations. However, some participants argued that being involved in custom work might affect the operator's own farm because producers who engage in this type of diversification might

focus less on developing their own farm operations.

6.5.4 Hiring Marketing Companies to Help with Selling Crops

Some farmers have engaged in hiring marketing companies to help them sell and advertise their products. As crop prices continue to decline, some farmers have not been able to sell their products in the last few years. Thus, some participants indicated they hired marketing companies to help find better prices for their products. “I work with a marketing company that helps me market my…, to sell my grain, and so that has helped in the pricing to do it in a little bit better way” (33M).

Marketing products can be challenging, and some participants expressed their concerns about the limited marketing skills they possess. Therefore, they rely on hiring individuals and firms to help with finding better prices for their products.

> The modern farming requires an entrepreneurial mindset. Farmers are going to have…, maybe, they don't know how to do the funding or financial side of things, but they are willing to find somebody that has that good idea to do that. Marketing is not my strong skill. So, we had to maybe look at somebody on the outside and help other marketing side. But despite that I think farmers should act more entrepreneurially, it does not affect their identity of being a farmer because farming is in your blood (28M).

Hiring marketing firms under certain contracting conditions has helped some farmers to find better prices to sell their products than if producers were to sell them by themselves. Other diversification practices that a few participants indicated that they have adopted include buying shares (some farmers have purchased shares in the market as a way of diversification) and adopting solar energy.

6.6 The Main Drivers for Adopting Diversification

Participants indicated that different factors motivate them to diversify their farm operations and adopt nonconventional practices. Some of these factors include the need

to promote economic and environmental sustainability, access to information, changing lifestyle, peer pressure, competition, and family circumstances.

6.6.1 Economic

Participants reported that the environmental and economic sustainability of the business plays a role in their decisions to diversify their operations. Economic motives include improving the opportunities to increase the profitability of the business by diversifying the products so as to reduce the influence of the market. In other words, diversifying and producing various products, instead of specializing in one or a few products or services. Interviewees also indicated that their economic motives of diversification include reducing input costs and improving the health of the livestock by having them eat fresh pasture instead of feeding hay.

6.6.2 Environmental

Environmental motives of participants include preserving the soil using conservation practices. One farmer summarizes it by stating that primarily, there are usually two reasons that motivate farmers to adopt on-farm diversification and nonconventional practices. They are economic and environmental sustainability.

> New on-farm practices are either two things, it is about money to make you more profitable or it is something to improve the soil, and the environment. I mean, there are two motivations. First is money, and the second one is to improve your soil, land, and the environment. So those are the things that we look at (14M).

Meaning that most farmers make decisions to diversify to, first, increase their profit and sustain their farm economically. Then, secondly, improve the soil and the environment by adopting conservation practices.

6.6.3 Information Accessibility

Some participants stated that the availability of information and the opportunity to meet other farmers who have adopted nonconventional practices have motivated them to engage in on-farm diversification. Some interviewees indicated that they learned about new opportunities to improve their businesses after participating in local events where farmers share their experience. For instance, some producers join the local organizations and attend local and regional conferences and training workshops to learn new innovative ideas on nonconventional practices that other farmers have adopted (peer effect), while others access such information through their connections with other farmers.

> So, I went to the South Dakota grassroots coalition to the grazing school and I learned a tremendous amount about rotational grazing and better ways to run livestock. And the reason I went there was to ask if anybody had known anyone that was grazing on irrigation in summer. So, the last day of the school, I finally met with somebody that has some information on that and it just kind of spiraled from there. It is open doors, there were more people doing it, there is more and more connections and that is what connected me to people who are doing different things, they let me join the soil health and that is how I ended up on the board of the soil health coalition (12M).

Another participant also stated that farmers adopt diversification practices when they see other farmers do so. He argues that agricultural producers, unlike business operators in other sectors, have strong emotional ties to their land and business, thus they are not easily convinced about new practices unless they see it adopted by other farmers, or learn from other producers who have adopted them successfully.

> I think there is a natural… the agricultural community is the weirdest community. It is the strangest industry and we talk about this all the time, and how in other industries they have less emotional tie to a certain practice that they do. But farmers have emotional ties to certain things like when it comes to tillage, they love to smell the smell of tilled soil or, or they just love seeing a certain crop grow, or they love…, they have a

> sentimental attachment to a certain color of machinery, John Deere, or something like that. Whereas other industries, they are going to go to the product that's worth the best value. There is a lot less emotional tie to their decision making. So, I think that is a big component to getting people to change. Because farming is such a family, it is such a heritage driven industry, which is cool, but the downside is it is hard to get people to change (28M).

In other words, business owners in other sectors accept any changes, they have little emotional ties to their businesses, and their goal is to make profit. The goal of farmers, on the other hand, is also to make profit, but their work involves lifestyle and they are socially connected to their businesses, the land, and the community around them.

6.6.4 Changing Lifestyle

Changing the lifestyle and the mindset is one of the factors that motivated the participants to diversify their operations. Some farmers might adopt conventional practices to change their lifestyle by moving to different practices because it is the same activity that they have been performing for quite a long time and feel that there is a need to change to a new practice. For instance, one farmer asserted that "some of the changes I made is just wanting to change our family lifestyle" (11M). Changing the family lifestyle brings more innovation and freshness to the farm activities.

6.6.5 Competition

Other participants asserted that they adopted nonconventional practices to remain competitive. Competition between neighbors towards new ideas that promote the farm business has motivated some farmers to seek new innovative opportunities. Besides, doing things differently and planning to be a model and unique, creates a peer pressure from other farmers. In other words, being influenced by what other producers think of you and wanting to remain as the leading innovative person motivates farmers to adopt

diversification. Competition is expected to also motivate producers to change their mindset and the way their operations have been conducted previously.

> These changes are drastic because there is peer pressure from our neighbors. Some people react for what we are doing, because they are not doing the same thing we are doing. People want to be on the top in trying every new idea, there is a lot of competition as everybody is competing against everybody. People want to be the biggest yield and the bigger producers, and we are trying to make the most profit but to do what is right for the land at the same time (12M).

The willingness to remain competitive and being influenced by what neighbors think of him/her, and eagerness to continue do things differently, motivates some producers to adopt nonconventional practices to increase their income and profit. Some participants indicated that competition motivates them to seek new innovative ideas and opportunities. However, others argue that farmers need to focus less on the yields and production and instead focus on conservation practices to reduce the impact of their activities on the environment.

6.6.6 Family Circumstances

Family circumstances motivate farmers to adopt nonconventional practices. For instance, some situations force farmers, especially those who are close to the retirement age, to reduce their farm activities and focus on practices that require less labor (e.g., wind farming, reducing the number of cattle, switching to grass production to lease it), or engaging in custom work. Some interviewees indicated that they are aging and there is lack of family help because many young generations do not return to the farm, oftentimes because the business is no longer profitable. Therefore, producers feel the need to adopt nonconventional practices that require less labor.

> Yes, I made these changes for economic reasons and to improve the land or the soil by using grazing, but also because of my age and I can't find

> labor. What forced us to change the operation was that my oldest son had to go to town. I mean, there was no place for him out here. We were not making enough money to support the family of six. He and his wife and six children (7M).

As the above participant indicated, lack of profitability forces young farmers to leave their parents on the farm and move to cities where they can work to afford to support their own families.

Some participants added that reducing the workload due to labor shortage is one of the main factors that motivated them to adopt diversification. They indicated that finding labor as well as being able to pay them is a challenge to producers.

> Another major reason that forced us to make these changes is the workload. When my dad retired, I was the one who was left here with the work, and hiring help is a difficult thing. It is hard to find good help and it is hard to pay them enough to keep them. And so that being a major hurdle, it was better for us to figure out how to handle the workload on our own, and making these changes allowed us to do that now. This farm was always supportive to families and now we want it to continue supporting the family (16M).

Also, as the difficulty to hire workers or find good help continues to be a challenge, farmers are left with tough choices. Therefore, diversification is one of, if not the only option for them in such circumstances. In this respect, some farmers indicated that they are adopting nonconventional practices to make the land more profitable and to attract young generations to remain on farm and continue the family legacy.

> Probably just trying to, I don't like the term sustainability because everyone throws it out there, but I just wanted to be profitable for my kids in case they choose to farm. And I have several friends who are my age that are farm families, and some of them say 'absolutely my kid has to farm' and others depending what they are doing they don't want their kids to farm. And I think that is happening in every generation and I would be thrilled if they do but I will absolutely not hold it against them if they don't want to (2M).

However, like many participants stated, this farmer asserts that he will not force his children to remain on farm, they will take over the land only if they are interested.

6.7 Challenges Associated with Diversification

Several challenges affect South Dakota farmers' decision to diversify. The most significant are the economic difficulties, access to labor, lack of time, access to technology, marketing, risk and uncertainty, the difficulty to find the right crops, accepting changes, the weather and climate, and convincing lenders to borrow money.

6.7.1 Economic Challenges and Access to Technology

The biggest challenge that affects participants' decision to diversify is the economic challenges such as limited financial resources to purchase land (various diversified activities require land expansion) and equipment, increase in debt, and access to technology. For instance, as the challenges to increase their financial resources are growing while input prices are increasing, participants asserted that they rely more on lending money from financial institutions to be able to cover the input costs and buy equipment and technology. "We are still staying on the small size. We don't have a lot of money to buy equipment and the technology. So, we just want to try and keep it simple. So, but it is that if something happens, I can fix it" (3M). This participant states that access to technology and equipment is a big challenge to small and midsize operators due to their limited financial resources and skills to use the technology. Another challenge is negotiating the price. For instance, those who produce grass and lease it to other farmers as form of diversification perceive challenges to agree with the cattle owner on certain prices. These challenges hinder the ability of farmers, especially small operators to further diversify or expand their operations.

Similarly, participants indicated that limited marketing opportunities to some crops is one of challenges that South Dakota farmers experience. They described finding a limited market for some diversified products such as small grains (e.g., oats, winter wheat, millet, milo, rye) challenges their ability to diversify and increase their income and profit. Also, diversifying into more crops requires different facilities to store these crops, especially small grains before they are shipped to the market, while there is uncertainty in finding a market to sell some of these products. Thus, they might be stored for a longer period until the marketing issue is resolved.

> One of the challenges is finding market for the products, finding a place to sell the product. I mean that is very challenging. You have to sell them a long way away, the grain elevator is 200 miles away. And, you have to store them [the new products] in grain bins before you deliver them. So, having grain storage is kind of a challenge. But another challenge is making money on the small grains, because the market… there is not any local elevators that buy small grains. So, I have to travel 50 or 60 miles to sell to sell it (15M).

Besides, there are less market opportunities in some of the local areas because of the distance and the cost to deliver some diversified products such as small grains to the market, and the fact that the local market does not buy these crops, farmers are hesitant to diversify their activities.

Furthermore, some farmers stated that the distance from the larger communities or cities (especially, those who are trying to produce organic food and it sell it locally) is a challenge. They argue that if the farmer lives nearby big cities, s/he has a better chance to grow diversified crops with less input cost and sell them directly to the local consumers.

> Another thing that makes me hesitant to diversify more is the market. We are too far from a larger community if I wanted to bring people in and have customers, I mean like selling locally. I wanted to do organic farming; I mean organic crops which do not need lots of inputs. I also

> wanted to bring in things like chicken and turkey, but where we located is very far from any sources. (7M).

In other words, having the farm business close to big cities facilitates selling the diversified products directly to consumers. According to participants, producing organic food and raising chicken and turkey requires less inputs, especially during the times that input costs have skyrocketed. Thus, some farmers believe that being close to big cities is an opportunity to diversify their operations.

Moreover, to eliminate the challenge of delivery or shipping costs, some producers engage in contracting services so that the contracting company may share the cost of shipping. Besides, farmers, in this case, are also paid more than the regular price. For instance, as this participant states, "they pay good if the product passes the testing rate, they pay a premium. It involves a lot of work, but the payment is much better than producing grain crops such as corn and soybeans" (15M). However, meeting such requirements is stressful because there is a great amount of uncertainty that the product might not succeed to meet these requirements, and the contracting agencies will not buy it if it does not meet their requirements.

> If it doesn't meet the certain conditions, they won't buy it. And it is just for feeding or for human consumption, which won't make enough money to grow. It has to weigh a certain tests weight. So, it has to weigh at least 60 pounds per bushel, and it has to be within a certain range of protein, if it is too high or too low, they don't want it. It is going to be certain range of protein, and it can't have any insects in it. You can't use round up to terminate it, to help it dry down or... So, there are certain things you can't spray on it, like the roundup. So, if they find traces of that, they won't accept it. So, those are the main things (15M).

If the product fails to pass the requirements of the contracting company, the farmer has to either ship it to places where small grain products are sold (which is costly and often challenging), otherwise, s/he might end up feeding it to livestock so that s/he does not

throw it away.

> The small grain crops are mostly grown out in Oregon and the Washington state. So, I would either have to ship it out there, three states away or I could feed it to livestock. Which means, the value is degraded because I won't get money that would help me to buy inputs for the following year. Although feeding livestock is better than getting nothing for it. So, those are about the only options, either to ship it out west where they need it or use it for livestock feed (15M).

Feeding the products that failed to pass the requirements of the contracting company might be a solution, however, it degrades the value of the product and might create a shortage of financial resources to buy inputs and plant similar crops in the following year or even cause uncertainty and disappointment to the producer.

Participants suggested some strategies to eliminate the uncertainty and risk of adopting diversified crops, especially the uncertainty that is associated with access to the market. In other words, some interviewees shared some strategies that they used to resolve the problems of accessing the market. For instance, they recommended that farmers engage in contracts with marketing companies, look for different markets, negotiate the price and constantly communicate with the buyers and explain the situation to them and the status of the intended crop. They also suggest that producers engage in contracting services in which the price is determined in advance.

> For instance, one of the small grains we have, we try to negotiate the price and say, it is going to cost us a lot more, in trucking. And so, they raised it [the price] a little bit for us to cover some of that shipping costs. Now, we did contract it ahead of time. So, I think if you are willing to ask and go, hey, is this negotiable? The worst thing that [the buyer] can say is no. One of the other crops is the rye and I could have contracted it, I was not sure what kind of yield I am going to get, because I want to save some of it back for feed. So, I talked to the buyer and he understood where I was at. He says, I will hold that price for a while. I think if you are upfront with your buyers and tell them your situation and see if there is a way you can

> negotiate a price or see if you can. And, if they don't want to negotiate, find someone else (27M).

However, the producer ought to be aware the type of crops they can contract, based on the crop yields, so that they do not lose money by engaging in contract for less potentially, or the crop that is not going to be yield the best.

6.7.2 Time and Access to Labor

Access to labor is reported as a great challenge to diversification. Interviewees indicated that diversification requires more human capital to operate different activities and more time to manage these activities. In other words, expanding the operation and adding new activities to the existing farm means needing more labor "the new crops that we added for diversification such as winter wheat bring new challenges. You need more labor and having less time to manage different crops and activities while working off the farm is very challenging" (15M). However, finding workers is a challenging task to producers as many young people are leaving the farm and the rural areas, and there are less opportunities to hire individuals who live in cities to come and work on the farm, especially if the farmer lives away from big cities. "It is not easy to find people and it's one of our biggest challenges. If we lived closer to more populated areas would be easier but getting good people and resources to move is hard to do here" (1M). Being away from populated areas and not finding people to hire or even get help is a big challenge to farmers who are planning to diversify, because if they diversify, they need more human capital and labor to do the extra work.

In this respect, one of the participants stated that it would have been helpful if they had their children remain on the farm to assist them with farming. "We are kind of limited on what we got to do. We are doing things now we probably wouldn't be doing if

we had boys behind us, or girls or whoever…. somebody" (17M). Therefore, no having children living on the farm nor being able to find workers is a challenge.

Another challenge that is closely related to labor, is the management and time factor. Adding diversified activities requires more time to manage the operation. Participants indicated that the ability to manage diversified activities simultaneously and use time wisely (as there is less time available after engaging in diversified practices) to achieve various tasks is a significant challenge to farmers in South Dakota, especially for those who work both off- and on-farm.

> But like, do you want to start raising goats or sheep or fences, keeping up, keeping things contained in management. I mean if you are basically a one-person operation and you want to start getting into all these different activities like agritourism or even a hunting paid hunting operation or whatever. You need to have the personnel to be able to implement those changes, it is hard to do that without that. So, I think that is something that as we transition or begin to bring our son into the operation that is why it is critical for us to look at other ideas on how we can make the business more profitable. Because instead of feeding one family you are talking about feeding two or three families, and to make the farm sustain economically. I think that is terrible (26M).

Diversifying can help bring new opportunities to improve the business, thus attract the young generations to stay on the farm. Nevertheless, both labor and time are critical factors that determine the extent to which the farmers can diversify.

Due to these challenges some interviewees expressed disappointment about the changes that agriculture is experiencing. They argue that farming used to be fun in the past, but that is no longer the case. It is not an interesting occupation today because of the difficulties it involves. As this participant describes:

> Farming used to be more fun in the past than it is today, it is just as tough as hell today. The number of hours you put in are increasing because farmers want to add a dollar to their product to survive. They work more

> than they used to so that they make some extra money. Like now, I know a lot of people in the area that have changed the beef cows selling time, they sell them late by a few months or increase feeding to have cows put some extra weight which brings some extra dollars. The same thing with crops, farmers spend long hours in managing the business (30M).

He explained that to make more profit and provide for their families, today's farmers dedicate more efforts and time than they used to in the past. While the costs of inputs are increasing, the returns, on the other hand, are decreasing due to the constant decline in crop prices. Thus, there are less chances to increase their returns.

6.7.3 Government Regulations Impact Farm Diversification

According to participants, government regulations such as excessive inspections and acquiring permits limit the ability of famers to adopt certain types of on-farm diversification. If the producer plans to diversify, depending upon the venture, there are several regulations to go through, these regulations make some farmers cease the plan for further diversification. "More diversification means you have to go through more regulations, getting permits. So, the regulations do not even encourage farmers to do better by diversifying further" (22F). Participants acknowledge the need for regulations, especially the basic ones that provide security and safety with regards to the health of consumers. However, they asserted that too many regulations do not allow them to diversify their income sources.

> Yes, there are a lot of challenges… you still have to meet, which is a good thing, but you still have to meet all the USDA requirements as far as safety and those are very basic, which is good…that is about the security of our food supply. But there is a lot of challenges for the small producer to do that. A lot of hurdles to get through, a lot of inspections. I mean, you need a lot of inspectors at the county, state, and federal levels of and a lot of…, if things can be streamlined there, that would make it tremendously easier for small producers. Because now, the current model is if you want meat to come from one of the big three meat factories, and

> everything is kind of that direction where for the small local guy you have got a lot of hurdles to jump through (16M).

Furthermore, farmers also argue that most of the government regulations are often in favor of large farm operators or companies. According to them, these regulations provide less support to small farm operators. Some interviewees indicated that government regulations do not affect large corporations because they (large farm operators) often focus on specialization while small businesses focus on diversification. Which, in some cases, also deters the chances of small farmers to compete with the large farm corporations.

> You have to play the game of competing with big farming companies. You have to play their game essentially…the game is set up for the benefit of big corporations. And with you have to charge more for your more locally grown stuff because you have all the extra hurdles to deal with and also you are producing healthier stuff. If you are looking for strictly certain prices, you can't compete, but you have to be able to sell your product because it is better. And you can do that if you want to take on that challenge (16M).

The impact of government regulations is significant on farmers and their operations in a sense that producers are not only restricted to certain practices but are also charged fees when they seek permits to grow certain products, which impacts the outcome of their operations. Therefore, the fees farmers pay to obtain permits are reflected in the price of the products that they produce. In other words, farmers extra costs to the price of the product when selling it to consumers, which affects not only the producer but also the consumer.

6.7.4 Changing Habits, Personal Beliefs, and Mindset

Overcoming personal beliefs and changing the old mindset or accepting the transition to nonconventional farming is also a significant challenge to farmers who are planning to adopt farm diversification. The habits and mindset of farmers might

challenge them to adopt new practices. For instance, being used to certain practices makes some producers unable to accept changes. "A lot of it is just the mindset and to think a little bit different to what I am doing, the research of what I should be doing. And perhaps one of the biggest challenges that I have had to face are changing the habits both in myself and in neighbors" (4M). Changing the mindset and reaction of the community members (e.g., neighbors, fellow farmers) to the changes that farmers make represents a challenge to producers, especially when some neighbors who are reacting are also relatives of the farmer. This participant further explains:

> Other challenges are the mindset and the reaction of neighbors. They always ask why we are doing it this way. They say, you are not doing it the way that we always do it for the past years, and that is kind of a challenge doing it since a bunch of my neighbors are also relatives. That is probably one of the biggest challenges, to get in that mindset or willing to change because even me at 50-years old I was used to doing things a certain way and for a long time (4M).

Neighbors may react to certain ways that farmers operate their businesses, especially if the farmers engage in practices that are uncommon. This creates uncertainty for nonconventional farmers to the extent that some participants indicated they had to assess their ideas and plans when adopting new practices, but also had to question themselves whether they are doing the right thing or doing it in a right way.

6.8 Plans for Future Diversification

Participants were asked to describe the on-farm diversification practices that they are planning to adopt in the near future. They listed several nonconventional practices that they are planning to adopt in the future. Some of these activities include adding or adopting more conservation practices such as no-till and cover crops to reduce the cost of inputs such as chemicals and fertilizers.

> Trying to improve the soil so I can cut down. If I can, on the input costs less fertilizer. I am not sure what, it is close to $400 a ton for urea. So, if I put out 200

> pounds that is 40 bucks an acre, a 100 pounds is $20 an acre. If I can cut down instead of 200 pounds farm wide 100 pounds right there, I would save 20 bucks an acre. So, I have an advantage over the person who has a poor soil may have to put it out (25M).

Besides, adopting conservation practices can help farmers to improve the soil by adding organic matter into the soil. Some producers use livestock to graze the grass fields and these animals produce manure that goes into the soil, thus improves the quality of soil and sustains the farm both environmentally and economically.

> Instead of buying organic matter to put on the land, rather than to cut hay and carry it to somewhere else, I plan to feed it to cows and then, it takes whole your shit away to make a lot more sensitive. Let the cow do that to herself, and then, anytime that I can buy organic matter and bring it to my land that would be a good decision. So, but I will have to develop some more water and facilities and some more things like that and that costs a lot of money (25M).

Adopting conservation practices such as cover crops and incorporating forage crops to feed livestock gives farmers a chance to release livestock in their fields and increase organic matter in the soil, instead of having to buy fertilizers, which provides both economic and environmental benefits.

More specifically, according to participants engaging in regenerative agriculture (which improves soil and biodiversity and allows farmers to create diversified activities and enhance productivity), it helps them become more profitable and to retain young generations on the farm. “I think there will be more people that focus more on the regenerative agriculture. Part of it is because there is going to be different enterprises that come out of it and more opportunities for kids and family to come back to the operation” (12M). Adopting regenerative agriculture means eliminating conventional practices that involve the use of synthetic chemicals and fertilizers, thus improving the health of the soil by restoring nitrogen and other natural ingredients in the farmland (Rhodes 2017). It

will help farmers improve the soil and the environment and maintain the economic sustainability of agriculture. Those who have already adopted these practices also plan to increase both their on-farm diversification and include other practices that they have not yet incorporated. Moreover, other participants indicated that they have been told about the benefits of adopting conservation practices to reduce the input costs but have not adopted yet.

Furthermore, three participants indicated that they are planning to adopt solar energy, they indicated that solar energy will potentially become one of the leading on-farm diversification practices that farmers will adopt in the future to increase their income. “I think we see that solar energy is going to be the biggest driving factor because the wind doesn't blow every day. But the sun comes up every day” (27M). They assert that there are fewer challenges associated with it compared to wind energy and other nonrenewable resources that farmers have adopted.

A couple of farmers who are currently running pheasant hunting on their farms stated that they are planning to expand it the future, because they believe it is a good future opportunity.

> What we have not really talked about is the hospitality aspect of it [farming], which we are planning into, yeah…, and that is just another little branch of the diversification that we are going to try and bring a little bit more value to the soil and we thought about it since 2012. But it is really has not been run the model that we use to build it is not model that is been very successful in terms of compatibility. So, we were working on ways of making it more cash friendly, it is not losing us huge amounts of money, but it is not doing a lot for us either to see (1M).

Strategies for further diversification also include writing books and novels on farm practices. Two participants shared their plans to complete the writing and release of

books that they believe, if sold, would generate further income for their families and farm. For instance, one participant indicates:

> One thing I don't know how that is going to work out, but I have got the text written for a book. And I going to get the illustrations, and everything done. I got somebody else doing that. And I don't know if it is going to be sold or not, but the people I have talked to them about it are encouraging me. If some of this went pretty good, we could be a big seller. It is not a book you read though, it is not like a western or a mystery novel (25M).

This producer indicated that he has been thinking for long time about writing a book in which he could reflect on his experience of farming and the nonconventional practices that he has adopted throughout years, which he expects that, if sold, will help him make profit.

Some farmers indicated that they will continue learning and changing their practices, especially focusing on reducing the input costs and less concerned about to the high quantity and quality of yield. About a quarter of participants stated that they do not plan to diversify in the near future. They plan to work with the current diversification practices and evaluate how they go, then think of further diversification in the long run.

Regarding the motivation to adopting diversification practices in the future, although some participants indicated that their motive is economic, most participants indicated that their motivation is both to enhance their income and profit and improve the soil health. “Adding grazing is probably going to increase our profitability, using cover crops and grazing also increases the quality of soil, so it is very beneficial economically and environmentally” (19M). As the soil health movement in the state is expanded, it is noticeable that adoption of nonconventional practices is expected to increase.

6.9 Reaction of the Community and Family Members towards Diversification

Family and community reaction plays a substantial role in farmers' adoption of diversification. While the degree and the nature of community and family reaction might vary from one farmer to another, participants indicated that family reaction has limited effect on their plans to adopt diversification and nonconventional practices, compared to the reaction of neighbors and the larger community.

Participants often negotiate the new changes (or their plans to diversify) with their spouses, children, parents, and partners in business and other family members associated with the business. As this participant states, "there was not a lot of reaction about it, we talked about it and agreed on it. Not a lot of reaction, no" (13M). Most participants stated that their families are supportive of on-farm diversification and any new changes they made on their farm. This is either because the family members are open-minded "in terms of my family, they are very supportive of these changes. They are very open minded; we all have the business mindset and accept whatever changes that will make our business sustain" (20M) or they understand the need to make changes in order to survive.

Although, some interviewees reported that they experienced little or no objection from their families to the on-farm diversification activities they adopted, others indicated that sometimes, at the beginning, it is hard for family members to accept the business transition unless their families see the results of new practices. For instance, their family members and business partners, especially those who are part of the family (such as fathers) did not completely oppose diversification and new changes but they were hesitant in believing that the new practices would be successful.

> When I first started no-tilling, my father was like that is dumb, why are you doing that. And even we are a couple years ago, he is like, yeah, look at all the stuff out there we shouldn't be playing field but part of that is he grew up when we are like chisel the ground or plough and stuff and you got a transition from what people use the blade to now (15M).

Another participant stated that family members and even neighbors have reacted the new on-farm diversification practices that he adopted such as bringing in goats and sheep.

> Well, there is a lot of people that don't like goats. There was a negative reaction, like they are not going to be profitable on this land. But the initial reaction was different than the long term, because when I take in or sell the goats and it generates $3-4,000 in revenue in a four-month period, that for no more inputs, and they been having pretty profitable (25M).

Also, as this participant states, family members may sometimes question whether the new changes are successful. However, being questioned makes producers carefully review their strategies on whether the new ideas or nonconventional practices they are adopting are successful. Being questioned is also a chance to justify the adoption of such practices to their families.

> I think their [family members'] reaction has been positive for the most part. I mean sometimes they question a few things, but that is okay…, that makes me think about what I am doing and why I am doing it. And if I can explain it to them that means there is a good enough reason why I am do it, and if I cannot explain it to them that means I am only doing it because it is an idea and if I can it is because I understand the changes that can have (4M).

Being able to convince the family members regarding the new practices is a key factor for some participants who have adopted nonconventional practices. Besides, participants stated that it is important that the operators carefully review the steps that they follow to guarantee a smooth transition from being an idea to a practice. Furthermore, family members might react, but their reaction often does not rise to the level that it causes tensions between the operators and their close relatives. "When I change things, it kind of

annoys her [his spouse] sometimes, but it is nothing that causes crazy reaction. I brought her sheep home today. I think she is probably frustrated" (28M). Overall, findings suggest that farmers who diversify their operations may experience some reaction from the community members little from their own families.

Doing things differently upsets some community members, especially if the adopted practices are less common in the community. "Neighbors didn't want me to get goats, everybody that kind of laughed, because how I am going to ranch now? But, when I had that check to take to the bank, they were laughing" (11M). However, as time passes practices often become normalized reactions lessen. This demonstrates how farmers' neighbors can reject changes at first, but as the time goes and the fruit of diversification is realized, as well as there are more producers in the area adopting such new ideas or practices, neighbors are more likely to normalize it. This encourages nonconventional farmers to continue diversifying. "Now, when there are more people doing it, and there are more operations that are doing that, and it becomes more accepted, a common practice" (37M). In other words, neighbors who first oppose the new idea tend to normalize and adopt it as time goes by and the diversification practice is proven to be profitable or environmentally beneficial.

Some participants consider reaction of community members as a normal behavior. They indicate that whenever the farmer adopts something new or uncommon in the area, there are some neighbors who express doubt about the successfulness of the new adopted practices.

> I am sure there is, because we are not doing what every other farm is doing. So anytime you do something different, there is going to be doubt, and the only way that doubt is going to go away, decades of still being…still being you are doing

> what we are doing. Yeah, there is a definite hurdle to survive and proving to the neighbors that we are not crazy (16M).

Some neighbors might even go further and ask questions to the operators who adopt new on-farm diversification such as the following one "why do you put in millet, why not? Well you should grow corn and beans. We have some people who do not like that. Why does it have to be done like everybody else?" (25M). This can put nonconventional farmers in a challenging position, morally needing to prove to their neighbors and the community that they are not breaking the norms and that the new practices they adopt are successful.

The above statement corresponds to the argument of Stenholma and Hytti (2014) that farmers are expected by their neighbors and the larger community to adhere to the societal norms. This is especially true if the farmer who adopts these practices is the first person in the area to do so. Community reaction affects farmers who adopt nonconventional practices, however, the impact of community reaction, in most cases, does not rise to the level that causes significant tensions between the operator and neighbors. "It was not [a significant reaction]. I mean, we still got the permits [permits to build pig barns and host them on their land], and nobody really took us to the court. And as the time went on, people kind of gave up talking about our new business" (37M). This demonstrates that despite the reaction of neighbors towards the new practices that conventional farmers adopt, the level of reaction, however, does not become intense to the extent that the operator is legally sued. But, of course, the neighbors' reaction although might not have legal implications, it might have social implications, because the social contracts between farm neighbor can be affected.

Farmers who adopt diversification use different strategies to respond to community reaction. Some farmers indicated that they just ignore the reaction entirely and move on. They justify that there are just too many people with different perspectives, thus it is impossible to convince all of them. Others indicated that they tend to explain to their neighbors about their motivation to adopt nonconventional practices and try to teach them how diversification and the new practices work, especially those who are willing to learn and have less objection to what they do. For instance, this participant states:

> We are kind of first people to adopt new changes, so neighbors view us differently, but we do not pay attention to that a lot. I think some people do not like the way we run our operation but there are also some people who like what we are doing, and they want to learn how we do it (19M).

The following participant, on the other hand, seems more frustrated about the reaction of neighbors and the community. Thus, he indicated that he is not concerned about the reaction of his neighbors who dislike what he and his family is adopting. He justifies that there are just too many views and he can't convince everyone about what he is doing, and he can't control their behavior.

> I don't care what the neighbors think. Yeah, I don't care about the neighbors' perceptions and their dumb ideas. There is just so many different neighbors who have many different ways of thinking, if we worried about what they believe, we are wasting our time worrying about something that we can't control anyway. So, that doesn't matter to us (26 M).

Furthermore, this participant emphasized that it is waste of time trying to explain to neighbors (those who oppose what he is adopting) how diversification and new practices work.

6.10 Recommendations for the Next Generations

Participants provided several recommendations for the next generations of

farmers. They stated that the next generations need to be innovative and be able to connect themselves with consumers and tell their story. In other words, being able to convince consumers about the value of locally produced foods and to teach them where their food is coming from as well as to sell their products to local consumers. “I really think being able to tell your story of who you are and what you do to a specific targeted consumer, because I think people are going to be wanting to get to know where their food comes from” (24M). Interviewers stated that today’s farming business is different, thus it requires more open mindedness. Therefore, they believe that the next generations of farmers are required to be open-minded and accept any new ideas to increase their profit and remain in business. They also need to educate themselves to improve their management skills, thus better manage both cash and operation.

Other suggestions that interviewees provided for next generations are to focus locally (local marketing) and improve soil health and produce healthy food. “I see things are really moving back to more locally, more locally sourced food simply because the coming generations are more in tune with where their food comes from, and how healthy it is” (16M). Many participants expressed their concerns that the current and the next generations of farmers need to focus locally and pay less attention to the global market. They argue that selling their products locally and supporting local communities through producing healthy food should be the priority for farmers across the country.

Besides, interviewees recommend that the next generations need to focus on diversification instead of specialization. According to them, specialization hurts the business, the land, and the environment because it requires the expansion of the land, use of heavy inputs such as fertilizers and other synthetic chemicals, and provides fewer

chances to family farmers to succeed economically.

> Everybody thinks that we are going to see more of the same in the future where you are going to see farms get bigger and you are going to see more… right now, the thing that is enabling these firms to get bigger is less diversification. They specialize in one thing where they might just grow corn and soybeans, or they might just raise cattle. And I honestly think that farming in the next generations is going to be competitive. They need to be diverse. Because those big farms, the way the big farms compete is that they farm large acres. (28M).

Participants argued that farmers who specialize rather than diversify need more land to produce more because specialization requires more inputs and more inputs will only be provided by expanding the land to produce more. Contrarily, diversification helps farmers to adopt nonconventional practices and produce more with less amount of land, and it helps farmers to increase the health of soil by adopting nonconventional practices including soil conservation activities.

Participants also encourage the next generations to focus on the incorporation of livestock rather than solely on grain crops such as corn, wheat, and soybeans. "I think that there needs to be more livestock in general because I think they are better for the long run" (2M). Additionally, the next generations are also encouraged to develop marketing skills and collaborate with nonfarm firms to better promote their products and teach the public the importance of buying locally. Besides, they need to pursue and adopt whatever opportunities that are available.

> We probably need to do a better job of marketing our own brand beef or meat, or some sort of marketing our grain. This is probably where we are falling the shortest right now. I guess but it is changing so fast that in 20 years if my son wants to farm, I think it is going to look way different than I can even imagine right now. It is going to be a different world, so I would encourage them to actually take any opportunity or whatever changes they can make to survive (18M).

According to participants, the farming business is rapidly changing, thus the future

generations need continue learning and stay up to date with modern agricultural tools that are forthcoming, acquire more knowledge about the new nonconventional practices, and equip themselves with different skills including management and marketing skills. Other diversification practices that participants recommend the next generation to adopt include renewable energy such as adopting solar and wind energy and technology, especially precision agriculture. The next generations also need to work on reducing the input costs and increase profitability to overcome different challenges they are expected to face.

6.11 The Impact of the Recent Changes in US Trade Policies on South Dakota Farmers

The recent changes in trade policies between the US and other countries have impacted some South Dakota farmers, especially crop producers both directly and indirectly. Mostly, the direct impact of the recent changes in these trade policies were significant. Consequently, some farmers who are directly impacted by these trade policies have been motivated to adopt on-farm diversification. However, some participants who are not directly impacted have indicated that they been indirectly affected by these policies as well.

6.11.1 The Direct Impacts

Some perceived direct impacts of the recent US trade policies with other countries include the fact that many farmers are still unable to sell their commodity crops because of the constant decline in crop prices. For instance, many farmers in this study indicated they have been unable to sell some of their products such soybeans and corn because of the constant decline in crop prices that resulted from the recent exchange in tariff increases between the US and China. Some of them indicated that they have reserved

their products for almost two years waiting for the price to increase, but it has not. This, according to participants, has created some sort of disappointment to many farmers in the state. For instance, the following farmer states that he has been waiting for two years to sell some of his soybeans because of low prices.

> I am going to have to do something pretty soon because I need money to farm in this spring season, but I had two years of soybeans at home. I haven't sold my soybeans because of the continuous decline in soybean prices, not only soybeans but also other grain like corn and wheat. But my account in the bank is empty, so I am going to have to sell some pretty soon although the prices are very low. I reserved it as I was hoping that the price goes up, and it hasn't. I thought it would maybe sell now (35M).

However, as the new farming season approaches, he is now forced to sell some of the reserved soybeans to buy inputs for the new season. Thus, the recent trade policies have created disappointment among farmers. Some participants stated that these trade polies have affected them but the subsidies from the federal government that are being provided to support producers that are affected by these policies have somehow helped these farmers.

> I suppose it is been a little bit of a negative that that is been a part of the lower commodity price. The prices were affected somewhat negatively. But then there was a payment that came to make up for that difference. So, I am not sure that it was a big negative. (38M).

In other words, according to this one producer, the subsidies provided to farmers to overcome the challenges that they experienced because of the low commodity crop prices that have impacted their operations have reduced the impact of these tariffs on some farmers.

Some farmers affected by recent trade policies have adopted wind farm diversification to help recover from the loss. Many farmers who have adopted wind farms are close to the retirement age and the motivation for adopting wind farm is often to

secure financial resources for their farm businesses and to support their families before and after retirement.

> I think it affected our operation because the crop prices are very low. We are just waiting for wind farm money to start coming in and help us a little bit so we will just retire. Grain prices are very low and does not worth a lot [growing grain crops], especially in our situation because we have problem with labor [not finding labor] (34M).

The above participant indicated that he and his wife have been affected by the recent policies, but they are expecting that adopting wind farm diversification would help them recover from the price loss and that they are planning to retire once they receive wind farm payments. As the crop prices continue to decline and the fact that they are both getting close to the retirement age, they have adopted wind farm as to diversify their incomes and reduce the workload on the farm.

6.11.2 The Indirect Impacts

The recent trade policies have also indirectly affected some farmers who are engaged in custom feeding, pigs in particular, as form of diversification. Although they are not significantly impacted, they are affected in a sense that companies that do business with them have changed the amount of food they used to provide to these farmers to feed the pigs as part of their contracting conditions with these companies. This producer indicated that they have been affected on their crops, but the tariff aid has helped them get back on track with their operation.

> Especially like, soybeans, because soybean prices went down substantially. And, yeah, so we got the, the tariff aid, whatever, so we got that. So, and the price of pigs went down substantially, but that really didn't directly affect us as much as because we are custom feeding. So, there wasn't a direct impact on there. The impact we felt there from the price of pigs gone down because of the trade policies was coming down from the company that we feed for, so as the price goes down, then the

> company wants to try and tighten things up right on our end in order because they are not making as much money because the trade policy. So, indirectly, that affects us too, it just doesn't affect the payments we have. But it does affect, because when things like that happen and margins tighten up, those companies have a tendency to try and want to make that up someplace else. So, what they ended up doing is they ended up wanting to get more from us for the same amount of money, they adjusted the feed amount. Well, yeah, so it affects the growth because they start doing things differently. They don't feed the same because of they might feed different ingredients. (37M).

According to this participant, the contracting companies are making less money now because of the recent changes in trade policies between the US and China. Because of these changes, the pig prices have continued declining in the last few years. Although these changes have not impacted the payment his family receives from the contacting company, the trade policies have impacted the amount of feed they receive to adequately feed the pigs which has reduced the weight that the pigs gain because of the amount of food available.

6.12 Training, Networking, and Innovation

Training and networking play a substantial role in farmers' adoption of on-farm diversification. In this respect, interviewees asserted that training and education are essential elements in the transformation of farming into nonconventional practices. They emphasized the need to acquire managerial and professional skills and to change the way farmers conduct their businesses. Participants indicated that the modern farming necessitates different entrepreneurial skills and mindsets. Thus, they need to be able to better manage their operations entrepreneurially.

> The modern farming requires an entrepreneurial mindset. Farmers are going to have…, maybe, they don't know how to do the funding or financial side of things, but they are willing to find somebody that has that

> good idea to do that. And they don't know how to do the marketing side of things, but they are willing to find somebody that has that niche. (27M).

Another participant adds that farming in a traditional way is not profitable today, therefore, farmers are required to have a business mindset, knowledge, and skills that are necessary to succeed.

> Perhaps, farming in a traditional way is hard today to continue making money. Farming without having a business mindset and some knowledge and skills or whatever is not possible today. You can't bring in new ideas if you are not open to changes (29M).

Most importantly, some interviewees asserted that farmers need to use modern farming methods and generate new business ideas. In other words, farmers have only two choices, either adopt nonconventional practices including diversification and precision agriculture so that they can sustain their businesses or stick with traditional farming and be forced to quit the business. According to participants, the future of farming is expected to be even more challenging than today. Therefore, adoption of innovative ideas and engagement in nonconventional practices is the only solution to increase the profitability of the business thus remain in business.

> New business ideas have to come. Farmers have got to the point that they either become innovative and bring technology to the business or fail and quit the business. Some farmers might not be in the farm business, I mean five or ten years down the road. Some people are talking like, I might not be farming after five year if the input prices continue going high and the outcome does not change. Specially, farmers that resist the changes but want to… or the survival instinct guys doing some things like trap in the corn bill and corn stocks just trying to get some extra money and it is probably not a good economic move for a long term, that is looking at from year to year, you know (19M).

Again, many participants stated that conducting the farm business in a traditional and conventional way is not profitable. Some of them are dissatisfied with the fact that many old generation farmers do not welcome new practices and are hesitant to change their

mindset while also being unwilling to involve younger generations (who can bring new innovative ideas) in farming decisions. Thus, they expect that these types of farmers are going to be left with no choice other than to quit farming, because farming in a traditional way that their parents and grandparents did is no longer profitable.

However, some interviewees are optimistic that the increasing involvement of a younger generation of farmers in decision making will restructure agriculture and transfer farm businesses into modern agriculture in the long run. As time goes by, young farmers will become the majority and change the way farming is conducted. Many believe that farmers cannot survive without adopting nonconventional practices that will lead to agricultural sustainability.

> But I can see younger farmers bringing very interesting new business ideas into agriculture. So, as the time goes and the young farmers become the majority of farmers, changes that are now being viewed odd are going to dominate the farm business because farmers can't survive in the old and current ways of farming (19M).

Farmers link education/training, technology, and age and argue that training and education are key aspects of success in farming business. However, they believe that, only young farmers possess these skills in most cases, and that they can better manage farm business in a modern business style. In other words, they expressed their concerns about the fact that the farming population is aging and fewer young people are expected to take over the farmland. Farmers realize that new skills and innovation are needed in today's farming and that younger generations can bring diverse skillsets to farming. This signifies the importance of transferring farming to young farmers and their involvement in decision making.

Moreover, participants acknowledged that the agriculture business is changing,

and adoption of new innovative ideas is crucial to transform their businesses. Some of them have already begun transforming their skills and knowledge by engaging in training and networking and using technology to keep their information and knowledge up to date. Some farmers even expressed their concerns about the inability to remain up to date with the latest practices and technology. They stated that technology and globalization are moving rapidly.

In this respect, some participants have joined private organizations such as Minnesota Farm Business Management Association that provides farmers with training on skills in areas such as financial management and record keeping, strategic planning, and how to operate with a mission, which they need to succeed in their farm businesses. Moreover, some participants believe that learning these skills helps them assess their success, better manage their operations, maximize their resources, and make better decisions.

> Yes, the financial association I am in, helps me with the record keeping, and that helps me make decisions based on profitability. What my profitability was the previous year, helps me make decisions and if I want to continue to grow that crap or change. The farming part is easy. Like running the equipment, feeding the cow, but deciding what to feed them, how much to feed them, managing the finance, contacting the bank, communicating with the market people, negotiating the price, buying the seeds and what seed to plant, when to plant, etc. (15M)

This producer indicates that the operational part of farming (such as running equipment) is less challenging than the management aspect of it. Another participant indicates that producers need to acquire managerial skills and make data-driven decisions that are based on information and knowledge, rather than relying on emotions and opinions. In other words, these farmers realize the need to be equipped with the skills they need to transform their operations into nonconventional practices and sustain their businesses.

However, according to some participants, the use of information or data they gather is incredibly challenging. They indicated that it is one of the significant challenges of transforming to nonconventional farming.

> We get training and we also have a lot of information available on apps in our devices…some of the information is iPad based. The managing part of farm…, all that takes time trying to figure out. I am like, now I got all this information and spend a lot of time of computer which has thousands and thousands of pieces of data and try to analyze it, finding someone to help you, and I am like… trying use this information and make the operation better. So, definitely, farming business has changed. Yes, we definitely spend more time on attending training courses and workshops. There are places that provide training to learn all the managing skills. Having employees, we need to learn how to manage that properly. You need to have skills in different areas, you need to manage the operation, manage the business side of it, you need to know how to collect data about the operation and store them as records, I mean all that kind of stuff that the operation (19M).

Analyzing the data and using them to make decisions is challenging to farmers. Especially, considering the limited skills of some farmers on the use of technology and data management and analysis, as well as data usage. Although farmers may hire some individuals with experience in information technology and data management or collaborate with those who have these skills, paying these people is, however, challenging.

Furthermore, some participants indicated that they are not able to afford to attend the formal training workshops that help farmers to develop their business skills, thus they often depend on self-education and learning by using the materials that are available on the internet. They use internet and watch freely accessible videos and materials on nonconventional practices which are provided by some experts in the field, especially those who have applied their practices in their own businesses. These experts provide

reflections on how diversification practices are successful, which reduces uncertainty among their audience. Some note that some farmers have trust issues with the findings of the academic society. In fact, one participant stated that data of academic experts are often skewed by the funders:

> What is not helped is that the data of state universities that are skewed by whoever's funding their studies, and that is why I would not put a whole lot of stock into what they say. I would rather hear from farmers that are implementing these practices and see what they are seeing. There are a lot of operations out there (2M).

Participants also indicated that they use their social networks including visiting other farm friends, neighbors who have adopted new practices, meeting with other producers in local and regional conferences, and meeting experts (especially those who also operate farm businesses) to learn new practices. Besides, participants stated that they use their previous experience to improve their businesses. Some participants who have worked off the farm bring their off-farm experience and innovative ideas into the farm to improve the business.

> And I was really thinking outside the box, I know that just that mindset carried over into the farming because we didn't want to have a farm that is 2000 acres to try and have all that volume to make this amount of profit, why can't we find smaller and still make that profit? My off-farm experience has helped me become open minded, looking to do things differently. The thing is that the principles of success are the same, no matter whether it is farming versus another business. (27M).

According to the above participant, working off the farm has provided him with different skills that he has later brought into the farm and helped his business prosper. He asserts that, regardless of the field or the sector, the experience the individual acquires is not significantly different. Therefore, bringing off-farm experience into the farm to improve the business is significantly useful.

Moreover, farmers visit experts in their farms and learn from them different skills. Not only on nonconventional practices, but also skills on being innovative and creating one's own marketing opportunities and selling the product directly.

> We started planting crops but that wasn't good for crop ground, it was pretty marginal soils back to grass. So that is kind of how we started and as we developed, as we have gotten more educated through the years. I think we have taken and applied that towards our cropland as well, so it is kind of been a mental shift a little bit. But we also visited a lot of other people and experts who do their own [farming]. And it is very overwhelming listening to them talk about the marketing, they do their own marketing, and they have their own business that they sell beef off the farm and honey (26M).

Another participant explains that through his networks, he was able to meet experts who focus on farm diversification and nonconventional farming. These experts have worked with farmers to teach them various skills that farmers need today. Therefore, for these participants, that was a golden opportunity to meet and work with these experts to learn the transferrable and nonconventional farming skills. The following participant adds that because of his connections with the indicated experts, he later ended up working with one of the companies that focuses on conservation practices:

> Through my networks, I guess I met two expert who work with farmers. So, I worked with them for a little while and I got hired on as the head agronomist for Ducks Unlimited to kind of head up their soil health program. And through this whole path of my professional career, I guess so far, I have gotten to meet people and become good friends with a lot of people like Gabe Brown in North Dakota who is a good friend of mine along with all the other guys the Soil Health Academy and plus many other farmers and ranchers across United States and around the world (27M).

This reflects the role that social networks can play to increase the ability of farmers to either be involved in formal training or access information and meet other farmers and experts from whom they can learn and acquire skills that they need to succeed in the

businesses today. Most importantly social networks help farmers eliminate the uncertainty that is associated with adoption of on-farm diversification and other nonconventional practices, thus sustain their businesses both economically and environmentally.

6.13 Conclusion

Most participants operate a family farm and have an integrated crops and livestock operation. Half of the participants and their spouses exclusively work full-time on their farms. Some participants have partnered with their family members to bring diverse skills and knowledge to the business. According to participants, engaging young farm family members in decision making is important, it improves the chances of transferring farming to the younger generations. Some of the key challenges that participants are facing today are the lack of financial resources, lack of access to marketing, uncertainty and risk-taking, and health insurance and access to healthcare. They also include weather variability, balancing between profit and environmental conservation, changing habits or mindset, and aging farmer population.

Participants adopted different diversification and nonconventional practices to increase their income and profit and to sustain their farm economically and environmentally. These include creating a value-added program such as feeding low-quality crops to livestock rather than selling them, adopting conservation practices to reduce the input cost, engaged in contracting services, and hiring marketing companies to help with crop selling. Factors that motivated participants to adopt these practices include the need to promote economic and environmental sustainability, access to information, changing lifestyle, peer pressure, competition, and family circumstances. However, to

adopt these practices, participants are facing some challenges such as access to labor, government regulations, changing habits, personal beliefs, and mindset. Participants also plan to adopt other practices in the future such as engaging conservation practices to reduce input cost and engaging in regenerative agriculture. Moreover, participants indicated that the recent changes in trade policies between the US and other countries have impacted some them, especially those focused on crop production. Some participants have not sold some of their crops because of the increasing decline in crops prices. This has motivated these participants to further diversify so that they can sell small grains when the grain crop prices are low.

Participants indicated that they experienced reaction from their family members and the community because of their adoption of on-farm diversification, it was greater among the community but not to the extent that it caused serious tensions between participants and their neighbors.

CHAPTER SEVEN

THE IMPACT OF FARM DIVERSIFICATION ON THE IDENTITY OF SOUTH DAKOTA PRODUCERS AS FARMERS

7.1 Introduction

This chapter highlights how South Dakota farmers construct their identity and define themselves as farmers, the meanings they assign to their activities, the way they perceive their identity as farmers including their family legacy and history, and how they perceive the community (neighbors, fellow farmers, and nearby relatives) views them and their role after adoption of on-farm diversification. It also addresses the role that farmers' attachment to their community and farmland plays in their decisions to stay in the community and in farming. Most importantly, the chapter addresses the fundamental question that the study aims to answer: Do on-farm diversification practices that South Dakota farmers have adopted in the last five years or so impact their identity as farmers? And if so, how and to what extent do they have an impact?

7.2 How Participants Got into Farming

The way farmers got into farming in the first place might influence their decisions, goals, and values. Most participants stated that they got into farming either through transfer of the farmland generationally, being raised on the farm or working on the farm helping the family since an early age. According to them, growing up on the farm and working with their parents influences decisions to become farmers. Many of them stated that farming is the only occupation that they have performed throughout their lives. Therefore, regardless whether the farm business generates adequate income and profit, many respondents stated that they still plan to remain in business, because farming

is in their blood. “I grew up on a farm. They say that you could take a farm boy off the farm, but you can’t take the farm off the farm boy.” (8M). Most participants asserted that they got into farming through their parents, families, relatives, and friends; and most farms they operate are owned and transferred generationally.

Being raised on the farm and learning farming skills since the early age while helping the family makes farmers equipped with the basic skills of farming. It also shapes the way they think and operate their businesses, influences their values and goals, and defines who they are.

> I am the third generation on…, here in South Dakota, and a lot of times I was helping my father in the field. He taught me in early age how to run the farm equipment and what to look for, and cattle and the stuff that I grew up with. It just makes me proud to be a farmer (7M).

Moreover, according to participants, being raised on the farm creates strong connection between the producer, the farmland, and the community, which impacts their decision to remain in the farming business.

While most participants who own the land they operate indicated that they got into farming by taking over the land from their parents or families generationally, a few indicated that they purchased some of the land they operate. In one instance, the previous landowner had experienced a financial strain that forced him/her to sell out the land. This land previous landowner was involved in massive debt or was unable to pay off the farmland mortgage.

> Well, I guess I was offered a farm, I sold some property of mine to a fellow and the landowner I bought from was in financial difficulty. So, I helped him out, I had money in savings account. So, I said well, you are okay, I will do it. And so, then that is how we got into the farm here. It is because he had purchased it but was unable to pay for it (8M).

Some participants grew up on the farm but worked off the farm for a period of time, then returned and took over the land from their parents, although they understand that farming today does not generate adequate income and profit.

Some of the above statements emphasize that farmers are strongly connected to the land, the culture, and farming lifestyle. Even if they left and worked off the farm for years, they might still return to the farm. The following participant indicates that after working off the farm for quite some time, he returned and took over the land along with his brother operating as business partners. He states that running it as a business helps them to adequately support their families.

> I was born into it. My folks had a ranch, and both sides of my grandparents were ranchers and farmers. And I got an older brother and the place that my parents are on long sustained more than one family. So, I went to work elsewhere, then I came back and took over the land of my parents. It is amazing to be a farmer, and the best thing is that we turned it into a business which helps us to better support our families. When you get into it [farming] you can't leave it. I hope my children will continue farming and ranching. It is the best gift to be a farmer (25M).

This participant appreciates growing up on a farm and hopes that their children be raised up on farm and later take over the farm. Even if they decided to work off the farm, they will still have strong tie to the farm and the land which might encourage them later to return to the farm.

Other respondents asserted that they got into farming through their peers and friends, which they had previously assisted with farming. Friends and peers can encourage the individual to become involved in farming and startup their own businesses, even if they do not possess financial resources or assets that will help them to do so.

> When I was in high school, I had a friend who had a small farm, so I would spend a lot of time helping his dad haying and that kind of stuff. Then I went to the auction to the sale barn and bought ten cows. And I

> didn't even have a place to put them, I just bought the cows and ended up taking them to my friend's house first. So, that is how we got started. And I am not even sure how many cows we had when we bought this place, maybe about 100 cows, somewhere in there. Yeah, it [farming] didn't come from a family member really, it is just something I always wanted to do. So, I am the first generation on my farm (13M).

The family and peer support along with personal determination or commitment to farming can encourage individuals to build up their own operations if they have the basic knowledge and skills of farming. However, participants stated that peer effect only works if the individual is raised on the farm or has good friends and peers that could help him/her further learn how to operate and manage a farm.

> I think the only way a person could get into farming is if the person has a family or have somebody that would work with them. I guess as far as for somebody wanting to do it, I guess it would depend on how they could get going, because if they had a way to start with somebody backing them, I would say yeah. If they don't, they would probably go against it because I think it would just be a financial strain, too hard to overcome (13M).

Only a few participants indicated they got into farming through their peers and friends. Most respondents operate farmland that has been transferred generationally, and that they are planning to transfer it to their children if they decide to stay in farming and continue the family legacy.

Participants were also asked whether they consider property in which they live in and operate as home. All of them, especially those who own at least a portion of the land they operate and live on the farm indicated that their community is very supportive, indicated that they consider the land they operate as home. “Yeah, I consider it as home, the community is good, and we are in love with farming and the land” (15M). Another participant states, “it feels like home, it does not feel like I am going to work, no. It is the only place where I would want to be, I am so happy to be here” (16M). They asserted that

the social and emotional support they receive from members of their communities is enormous to the extent that some of these participants stated that they are planning to stay on the farm even after they retire. “I am going to retire but I won’t leave or quit farming, I might slow down. If you love what you are doing, it is tough to retire from that” (26M). This emphasizes the importance of community support in farming business. Moreover, even those who do not own the land they operate expressed satisfaction of the social connections between themselves and the community in places where they operate the rented lands.

In terms of their plans to stay in farming, most participants indicated that they are planning to remain in the business until they retire, except if situations such as health issues affect them. This is especially true if their children would stay with them or return to the farm. Those with children often hope that their children stay on the farm or that those who have already left return to the farm so that they can help with the operation and take over the land.

> That would probably depend on next generations as well. If my kids will work with me as they grow up and after becoming adults. If one of them would want to take over, then I will hand it over to him or her. I do not think I will even leave the farm unless some unexpected situations happen which may limit my ability to continue (18M).

However, some respondents (especially those who are not generationally tied to the land or have family heritage to preserve) stated that although they are not planning to leave farming soon, they might sell the land if the economic situation continues to be challenging and if they find the right people (some individuals who are pro-environmental conservation) offering the right price.

> Well, I won’t quit, it would be upon my death. It would be in my trust that if something happens to me, the land would be gifted to the Nature

> Conservancy. But, again, if the right person came along with the right price and I felt like it was going into the right hands I could sell it, because it is not like I am a fifth-generation farmer. This land is not my heritage and when my parents have a century farm, I know what that is about. This is not a century farm, but I am also not going to sell it to Yahoo across the road because he needs more pasture to overgraze it (23F).

This individual stated that she bought land recently after she moved to South Dakota from another state. Although she has no heritage on the land, but her conservation values which make her attached to the land do not allow her to sell her land to corporate farmers, especially those who care less about maintaining environmental conservation. Others who have weak ties to the land because the land is not owned generationally nor are they strongly committed to the land conservation are more likely to sell their properties (if they ended up making less profit) and move to other places.

Some producers whose children are not expected to stay on or return to the farm asserted that they will be forced to sell their land. Others indicated that they will keep it for their children even if their children do not return to the farm when the parents are alive, as they believe that their children could potentially use the land in the future. Nevertheless, most participants stated that they are not planning to sell their land to large corporations. Many producers believe that large corporations are often less concerned about land conservation, thus they are hesitant to sell their lands to these companies. A few of them, however, indicated that they have no problem selling their properties to the large corporations. They argue that not all small and family farm operators adopt or maintain land conservation either.

Some participants asserted that they are planning to transfer their lands to their children to maintain their family legacy. They stated that they are planning to teach their children the farming work ethic, the unique work ethic that they believe their children

will not find elsewhere. To them farming is a way of life that they want their children to carry on and pass to the next generations.

> Raising four kids on the farm, I think is was nothing but a benefit to all of them, because they ended up with a work ethic that you just don't find city kids that have. I mean, the oldest one, when he was probably 12 years old, he will get off the school bus, come in and change clothes and go out and start doing chores. He didn't come in and do homework. That is all he ever wanted to do. Those types of things can't be measured either. I mean, that is one of the reasons why we wanted to stay on the farm. Like I said, we had lots of reasons early on to quit. I mean, we are going to do this because this is the way of life that we want our kids to continue (38M).

According to this participant, farming provides his family with unlimited but immeasurable benefits including having their children learn work ethics that they will find useful to succeed in their future, even if they decided not to stay on the farm.

7.3 Participants' Interpretation of Being a Farmer Today

Participants expressed different perceptions about their definition and interpretation of being a farmer today. Some of them consider it primarily as a business, others believe it is mostly a lifestyle and way of life, and the third group conceives of it mostly as an identity itself.

7.3.1 Farming is a Business

Some participants consider farming a business but have two different focuses. Some of them exclusively focused on addressing the profit aspect of farming such as making profit by maximizing the production and utilizing the land to its highest potential. Others believe that farming is an opportunity to generate income to support their families and increase their profit while preserving the land and the environment.

> We find the best way to make every acre profitable for our operation and utilize every acre to the best of its ability whether it is what cops or forages or with

> livestock. And to do our best to leave this ground in a better condition than one we got it (21M).

Farmers who focus on land conservation argue that generating profit without observing the impact of their farming practices on the land and environment will degrade natural resources and create challenges to the future generations.

In this respect, participants argued that farmers have an enormous responsibility to balance between generating profit and conserving the land and the environment. In other words, generating profit but also maintaining stewardship of the land and taking care of animals. “I think it is a blessing to be a land steward. I think it is a huge responsibility of trying to leave the land better than you took it” (30M). Moreover, some of them stressed that their goal to adopt conservation practices is beyond maintaining the sustainability of the land and the environment. “Any food that we produce off of it [the land] is going to make people that consume it healthier” (11M). They believe that conserving the soil allows them to produce healthy food and, in turn improve the overall health of society.

7.3.2 Farming is a Way of Life and Lifestyle

This group of participants described farming in different ways. Some of them consider it a lifestyle or a good place to raise a family and teach children a good work ethic. They argue that farming helps them teach their children the basic work ethic and responsibilities that, according to them, are useful in different occupations. They are skills and ethics that they believe their children will not find elsewhere. For instance, working on a farm enables their children to learn skills on equipment repairing, become attached to the land and the environment, and work outdoors managing the chores and feeding animals.

> When the children were small, they could be working with you and learning some of the skills that are so beneficial to know, no matter what vocation they might go into. They learn some of the basic work skills growing up on a farm and doing carpentry repair. It is rewarding to see the results of a lifetime work and efforts. And what you have been able to put together is a sense of accomplishment (39M).

These participants consider farming as a cultural activity, a way of life and lifestyle. They consider it as a hobby and joy, not only a business, which has a symbolic meaning to them. It is a practice that is inherited, and it is in the farmers' blood. In other words, to respondents, farming is a hobby and joy that involves a set of different activities that producers perform daily and proudly alongside their families and plan to pass down generationally.

This particularly means being connected to nature (the land, animals, the environment) and the community. "Farming is something I grew up doing, I enjoyed since I was young and still enjoy it. I really don't look at it as being a job, it is way of life" (33M). They indicated that they often work outdoors along with their families (e.g., spouses and children) and nearby their residences, enjoying the natural scenes, which creates strong emotional ties to their farmlands and strengthens the social bonds between family members as well as between them and their neighbors. "People enjoy it [farming] because of everything that comes with it. Right now, I am at home, I can see my cows and sheep right over here. Most of the time, I am working outdoors. If I want, I can bring my kids with me to help me" (28M).

In this respect, many participants asserted that farmers operate in a unique environment, attach symbolic meanings to their activities, and are strongly attached to their communities and farmlands. Being attached to the community and helping each other in times of need plays a significant role in their success as farmers to the extent that

some of them believe that they would not continue farming without the support of their neighbors and the community. “I enjoy farming and love to be here beside the land and the community. Without the community, I wouldn’t be doing what I do. I am proud to be a farmer” (32M). Furthermore, farming provides them with autonomy, being free to do what they want and whenever they want without supervision, compared to nonagricultural businesses. “I wouldn't tradeoff my lifestyle for any with anybody, I guess because we are our own boss and we are working in nature and we could see the claves born and crops come up, so we love that part of it” (31M). They are proud about farming, waking up in the morning going to do the chores and working outdoors with their families. Being around animals or crops provides farmers with special feelings and meanings in relation to their activities.

7.3.3 Farming is both a Business and Lifestyle

Some respondents, however, stated that although farming is a way of life and good lifestyle and the goal of most farmers is not to become rich, they are on the land to make profit to support their families *and* financially sustain their business.

> I think it is more of a way of life for us. I mean, yeah, you hope you make a profit, it is all that holds us here. You have to make a profit in order to be sustainable. So, that is the thing, you can’t only operate so long as the nonprofit in farming. But also, we are not here to become rich. Yeah, it would be nice to be rich, but if we got rich off the deal, it is not like we would sell it to go do something else (37M).

These participants indicated that their primary goal is not to become wealthy, but, even if they accumulated enough wealth through farming, they do not believe that their role as farmers will change nor will they sell out the land and move to other places. They argue that their identity as farmers will remain the same.

7.3.4 Farming is an Identity

Moreover, to some producers, farming is not a lifestyle but a whole identity, or even a combination of different identities. For instance, some participants indicated that God has put them on the farmland to produce and feed humans and animals. They are proud for the opportunity to be a farmer, conserving the land and feeding humans and animals. As one participant states, "we think God allowed us to work on a farmland to produce food. Food is the most important thing on the planet, and we want to raise healthy food. This is a cause from God for us to be farmers" (8M).

Additionally, some participants connect their farming identity to other social identities. "Well, first and for most I view it as what God had called me to do, he has called me to provide food for the word and you know, in particular and you need to do that. I think being a major portion of the labor of a farm makes me grateful for the opportunity that God has given me" (18M). Another one states, "well, I mean, I felt I was born to farm. Again, I am a Christian, I will put it that way, and I felt it. Well, it was one of those moments when I had no doubt about wanting to be on this farm" (8M). As this participant explains, as a Christian, he felt that he was born to farm, take care of animals, and produce food to feed humans, which makes him a proud farmer.

7.4 Whether Participants Consider Themselves Farmers or Businesspeople

With the increasing calls on farmers to adopt principles of entrepreneurial agriculture, farmers are faced with difficult choices. Some are confused about whether to remain in traditional farming and preserve their traditional identity as farmers (producer-farmer identity), or to adopt nonconventional practices such as on-farm diversification in which they need to be innovative, acquire managerial and professional skills and

transform their operation into a business and acquire new identity (entrepreneur-farmer identity). In this respect, participants where asked whether they identify themselves farmers or businesspeople people.

7.4.1 A Businessperson

Less than half of participants described themselves as solely businesspeople. They stated that farming is a business, it involves decision making and management that goes beyond just field activities. For instance, one participant indicated that communicating with financial institutions, borrowing loans, and starting up a business and expanding and developing it from little or no assets to a successful firm requires some knowledge and skills of business management. This is especially true if the farmer did not inherit the land but started up the business by him/herself.

> I am a businessperson, an entrepreneur. I started with nothing and now I have a lot. I started with nothing. I walked into a bank and told them what I wanted to do. I told them that I wanted to borrow some money and they gave it to me, and I started farming that very week and ever since. Yes, I grew and bought my father's farm. I didn't inherit it. Nobody gave it to me. And when he retired, I bought it. Yeah, I am an entrepreneur (14M).

According to this participant, without having some sort of entrepreneurial knowledge and skills, it would not be possible to successfully develop a farm business. Producers argued that operators need skills and knowledge to expand a business.

Some participants asserted that farming is not significantly different than running any other businesses. They stated that although farmers have strong attachment to the land and that the farming business is often transferrable to the next generations, both farm and mainstream businesses aim to accumulate wealth and provide family support. “I am a businessman that happens to farm, and it is a multi-generational thing I am sure you can find other business where the same thing happens” (2M). Another producer stated that the

difference between her and a mainstream businessperson is that the latter may hire a CEO to run for him/her, but for her, she is always the principal business operator.

> I am a businessman who farms, just the difference [between her and businesspeople in other sectors] is the amount of investment that is involved that the businessmen in other sectors hire a person to be the CEO of a company. But I am probably similar to someone that is running the operation that his grandpa started, whether it is a manufacturing company that makes furniture or whatever (6F).

Some participants believe that there are many similarities between the way they manage their businesses as farmers and the way other businesses are managed. As this participant further demonstrates:

> A businessperson, because every decision you make about farming is a business decision. It affects your bottom-line no matter what. It is much more involved, and you cannot afford to make mistakes. So, it needs to be a business, you have to have a sharp pencil. Yes, the saying goes, good calculator (36M).

Participants stressed that unlike other businesspeople, farmers possess managerial and professional skills that help them financially manage their operations. They pay significant attention to the adequacy of their plans so that they avoid business mistakes and the imbalance between the inputs and outcomes. “We don't just give our products away, we do have to sell it, we look for better prices or the best price we can make. We weigh our expenses and our income. So, yes, we have to be good businesspeople as we possibly can be. So, I don't think that is kind of a fair question, whether we are farmers or businesspeople” (6M).

Also, participants stated that the culture of managing the farm as a business is evolving, especially as the nature of farm business is changing due to the ongoing economic challenges. One respondent emphasized that the way he manages his farm business has changed over the last two decades or so. “Currently I consider myself a

businessperson, I wouldn't say that maybe 20 years ago but businessperson now and farming is just a business I do" (19M). He stated that he has changed the way he manages his business from traditional farming to running it as a business, in the past he would not have called himself a businessperson.

In this aspect, respondents indicated that as farm business has changed and different skills and knowledge are needed today than previously, younger generations are more likely to define themselves as entrepreneurs or run their farms similar to the way the modern businesses are managed. "Generally, I think the newer people or the young generations that are coming into agriculture have that entrepreneurial minds, and I think that is great. I think that is fantastic, because they are willing to make those changes" (27M). This producer is optimistic that the younger generations are more entrepreneurially-oriented and that they will soon take over the farm business because they have the business mindset that allows them to operate their farms as enterprises.

Moreover, some participants argue that the public perceptions about whether farmers are businesspeople needs to change. According to them, although farmers consider themselves businesspeople, the public still does not recognize farming as a business as compared to mainstream businesses.

> I consider myself a businessperson, a businessperson is how I would describe myself. I just had a discussion about that yesterday with a couple of people. They know that I am a farmer, but they say you don't look like a farmer. You never look like that; you look like a business professional they said. I said, but I am, I am a professional businessperson. They are like, no, no I mean like working at office and that is your job (34M).

According to these participants, traditionally, society identifies businesspeople as those who operate businesses in the urban areas such as commercial and tech business where business owners often as act as CEOs and hire managers and workers. They argued that

producers need to be recognized as businesspeople as well. “Well, I think a farmer is a businessperson. I mean, would you go and ask a doctor whether you are a doctor or a businessperson, or asking a farmer that runs a plumbing shop are you a farmer or you are a businessperson” (7M). However, when asked about the reason why they consider themselves businesspeople and whether they believe that they equivalently possess the skills that businesspeople in mainstream businesses possess in order to successfully develop their businesses, participants responded that farmers are heterogeneous, they have different perceptions and skills.

Respondents also indicated that modern farming is multifaceted, it involves various tasks that the producer cannot manage for the operation without having some basic business skills and knowledge. According to them, this necessitates the formation of collaborations and partnerships between farmers from different ages who have different educational backgrounds and skills.

> Farming is managed on many different levels. The financial, the workload, grain marketing, equipment repairs. Like every day you could wear multiple hats, many different opportunities to do many different things, and every farmer probably has areas where they are better at one than the other. But part of it, it is being able to be professional about it and to communicate to the non-farm people that this is a profession as well (34M).

There is a financial aspect of farming, familiarity with the latest technology (such as adopting precision agriculture) and new practices that current farmers are adopting to remain competitive in the market. For instance, the decision to diversify and what crops or livestock diversification to adopt, managing risk and uncertainty, and carefully balancing the inputs and outcomes.

As this producer states, “It [farming] needs a lot of skills and most people now

focus on the managing side rather than just putting seed on the ground, putting chemicals, and sitting there waiting for the result. In the modern farming, there are other stuff that are probably more important than farming" (19M). Additionally, managing field operations, finding labor, managing human resources (if workers are hired), managing debt, communicating with landowners and negotiating loans with financial agencies, and accessing lending opportunities are all tasks farmers need to address. It can also involve assessing marketing strategies as well as hiring a marketing firm or individuals with knowledge on marketing to help with marketing. As this farmer describes:

> There are so many things to manage in a farm today. There is financial management, tax planning, and estate planning. There is agronomy, there is livestock (if you are a livestock person), and there is marketing and that is huge. I think I know of a couple of farmers who are struggling because they are just livestock guys. But they don't make for what I can tell a good business decision. If they had somebody else managing that they could excel in taking care of the livestock. I try to concentrate on the managing of the few guys that who work for me (2M).

According to this respondent, these tasks can be overwhelming to farmers, especially those do not possess some of these skills, and who those have not yet adopted nonconventional practices. He continues that some producers may hire individuals who have knowledge and skills in these areas.

> All the paperwork of the loans with the bank and that type of stuff, and so I am forced out to find people that can help me manage areas where we can't. Agronomists are one of them and I have hired a firm to do that. For help, I rely a little more on outside agronomists than some farmers do because they excel at that more, and I don't mind it because I am not as good at it as I would like to be. So, it is more about being able to manage and stay on the center of things as oppose to just being good at just one of those things. So, you have to do more of the managing side end of the business type of thing (2M).

However, some farmers have expressed frustration with the cost of hiring people with these skills. These participants concluded that these challenges can become significant to the extent that some farmers have been forced to leave the business.

7.4.2 A Farmer and a Businessperson

While some participants identified themselves as businesspeople, others consider themselves as both farmers and businesspeople. They indicated the two identities are inseparable. But most of those who identified themselves as simultaneously farmers and entrepreneurs stated that they are farmers first, then businesspeople. Some of these producers indicated that they do not currently identify themselves as businesspeople, but they are in transition to run their operations more like businesses. One respondent stated that currently, he considers himself a farmer, but he is planning to change and become more business-oriented. He recognizes the challenges that the agricultural sector is experiencing today because of the economic changes. This participant also believes that seeing his neighbors adopting nonconventional practices motivates him to move toward more business-oriented farming.

> I am still stuck in farmer mode. But I need to change, I need to be more business minded. But, yeah, that is where I come, I am a farmer. So, it is a combination of both. Just recently we started going with a more professional accounting firm who can help us with the business, versus just tax preparation. So, we just got involved in that last year, because we do want to be able to make better business decisions (27M).

To transform his farm into a more business-oriented firm, this producer has joined an accounting firm that provides training sessions to farmers to develop their professional and business management skills that are required to succeed in today's farming.

This producer adds that while the accounting firm that is currently assisting them is not an agricultural-based firm, they believe that it is a good step in the right direction.

They are planning to find an agriculturally affiliated training firm that focuses on developing the managerial and professional skills of farmers. Besides, they are hoping that their son who current attends college will take some business classes that will equip him with some business management skills that he can bring to the farm which will help them boost their business.

> I am not sure that we are with the right firm yet because they are not necessarily an agriculturally based firm, I think we need somebody who really focuses on that business of agriculture. But I am hopeful that our son will learn some of these skills from school. We have expressed to him that if he wants to come back home, we want him to have that more of that business background by taking some of those business classes at SDSU [South Dakota State University] so that he can weigh in on some more of those business decisions as well (27M).

Although he has plans to transform their farm into a more modern business and adopt more nonconventional practices, this producer, however, believes that their primary identity will remain producer-identity, especially in terms of their operation. This participant asserted that they can progress by transforming their farm into a business that applies professional and managerial skills to succeed and remain financially viable, but the farm aspect of their business, or their identity as farmers, will remain the same. They expect that they will have two identities side by side.

> As far as our operation, I would still identify myself the farmer. Just, I think you can progress. Yeah, I think you can have both. I think you can, you can have the community, you can have the ties to the land. You can. You can have all of that, but I do think you have to treat it as a business also. So, that is real and that is hard, especially when you start talking about the next generations (27M).

This farmer explains that the farming aspect of his operation will forever remain the same because it represent the symbolic part of their identity as farmers and their ties to the land and the community, and the fact that farming is a transferrable business that involves

family history and the legacy of farming, which is passed down to the next generations. His spouse provides an example:

> I am going to use an example when our son said. He said, I want to come home, my husband said okay we will make it work. And I said, wait a minute here. We need to make some business decisions. And so, I think it can, there can be both identities. There are some decisions that you are going to make on more probably an emotional level. Because of the way you feel about the operation, but you also need to make good sounding business decisions (27F).

According to these participants, farming can be considered a business and robust business decisions can be made in farming. However, unlike many mainstream businesses, farming often involves emotional ties to the land, which can make it difficult to disassociate between emotions and solid business decisions.

Another producer provides a similar argument, saying that he considers himself half a farmer and half a businessperson because he believes farming involves emotional ties to the land, neighbors, and the animals. "This is a tough question. I think it is hard to separate these two. I would say I have to be 50/50. I have to look at taking care of those animals every single day. Because ultimately if an animal dies, on the business side, that is not good" (28M). Also, as the following producer further elaborates:

> There is a difference, the attachment to the land, we have this love that is a blessing and a curse because when you are taking away from it, or it is taken away from you, that is really difficult. But at the same time there are things we share with business managers in other sectors. Like, as a farmer, you need to manage a lot of things. I think good farmers are who run the farm as a business because if you do not think as a businessperson you can't survive. A successful farmer will look at the options and make the right choices and I can't quite see that that would be different from being a farmer (30M).

According to this participant, there is strong connection or tie between farmers and their natural environment including their attachment to the land, habitats, livestock, and the community. Thus, it is difficult to distinguish between farming, the land, and the

environment. She indicates that despite farmers sharing some business aspects with mainstream entrepreneurs, they are different.

However, at the same time, if the farmer does not operate the farm as a business, there is little chance that s/he could be successful or remain in business. Another respondent emphasizes that although the identity of a good farmer is increasingly becoming common, producers need to do more to transfer their businesses into nonconventional and entrepreneurial agriculture. He argues that it is hard to remain in business today if the producer is a not a good businessperson.

> I don't think you can separate the two. More and more it is getting to be that you can be a good farmer. But if you are not a good businessperson, you won't survive, because you are dealing with quite a few dollars making some important decisions that are business decisions. I mean, I am a businessman, but it is a lifestyle business not strictly a business. It is not just a business, I don't think everyone can do it because if they did, they could take their money somewhere else (5M).

He asserted that farmers are businesspeople because they are dealing with financial resources and generate income and profit out of them. But he agrees with the previous participants that running a farm business is slightly different than running any other business.

Moreover, farmers who indicated that they identity themselves first as businesspeople then farmers are often those who come from nonfarm business backgrounds or grew up on a farm but worked in nonagricultural sectors before they returned to farming. These individuals often approach farming differently than those who were raised on farm and never held jobs in other sectors. For instance, those bringing skills from nonagricultural sectors often approach farming as purely a business, especially if they did not inherit farmland or have not been raised on the farm at all.

These individuals often have less attachment to the farm and the land and even the community they operate in, to some degree.

> To me, and part of this is because I come from the business community first, I did not grow up in agriculture. I tend to approach it more like a business, I guess. That is why I tend to go to a lot of the educational things that are out there and tend to learn a lot more and see if there is anything we could apply to our situation. Anything that would make it better. So, I would almost say I do it more the business first (24M).

Other participants indicated that they identify themselves as businesspeople first then farmers, because being a businessperson requires that the individual be innovative and creative and that their business decisions involve fewer emotions. In doing so, farmers bring new innovative ideas to improve their enterprises. Also, being a businessperson first then a farmer means that they evaluate their business strategies and make knowledge-based decisions rather than focusing solely on the field work.

> It is important to be a businessperson as a farmer because you have to be innovative to bring new ideas to the farm and improve it. In terms of being a businessman, we look at the numbers, we do the numbers before we try to change something. And we spend a lot more time managing. We are not out there most of the time working on equipment as previous farmers did. So, I would say we are a business minded farmer (13M).

Therefore, to continue farming and increase their profit, these producers indicated that it is important to be a businessperson. According to them being a businessperson motivates the farmer to seek knowledge and training to develop the business skills that are necessary. Although both farmer identity and business identity are not separable, thinking as a businessperson also allows farmers to seek knowledge and skills about making business decisions and dealing with quantities.

> In order for me to be able to continue to operate my business, I have to be a businessman and I have to make money. If I do the right thing and take care of my land, then it is going to pay me back. So, they are not mutually exclusive, two

> sides of that coin. If you do everything right comprehensively, and work towards sustainability for the future, the two identities can go hand in hand. So, I would say primarily have a businessman because I have to make money in order to survive to continue to be available. If I don't make money, then I have to sell my land because that bank can help me do that. First and foremost, a businessman and the farmer concepts must go hand in hand for us to guarantee the long success (11M).

Having these skills and becoming successful in their businesses, respondents believe that achieving business success can promote the farming side of the enterprise and make the business sustainable. Having adequate financial resources that the farm requires to economically sustain and simultaneously preserve the land can create a better future for the farm business.

7.5 The Meaning of a Good Farmer

Most participants believe that the meaning of a good farmer identity has changed over time from conventional to nonconventional farmer. The majority of participants consider a good farmer as one who focuses on environmental and economic sustainability, and some believe that it is farmer who operates the farm as a business.

7.5.1 Meaning of a Good Farmer has Changed over Time

Some participants indicated that the meaning of a good farmer has changed over time. In the past, a good farmer was a farmer who produced the highest quantity and quality crops and livestock without being overly concerned about the land and the environmental conservation. According to them, in the past, fewer farmers were concerned about environmental and agricultural sustainability. For instance, the ideal producer in the mid to the late 20th century was the one who engaged in deep tillage and had money to buy the best brands of equipment, fertilizers, and chemicals. It was also a farmer who had weed free cropland and whose crops yielded the best.

> I go back to thinking that there was a time when my dad had John Deere equipment and he bought a John Deere 7000 corn planter. At the time when John Deere did that in the late 60s and early 70s, it is kind of revolutionized planting equipment. And it made it more consistent and easier for a farmer to get a crop, because it took a lot of the things that a good farmer had to know as far as setting the equipment, getting the seed in the right depth, and getting the right compaction around it. It did a lot of those things. So, my dad always said that it made good farmers out of a lot of poor farmers. But, so, his idea was that if you had a good-looking crop and good-looking livestock, you were a good farmer (38M).

However, as time has passed and farmers have realized that conventional farming affects the land and can hurt future production, characteristics of what farmers themselves consider to be a good farmer have started changing. Thus, to an increasing number of farmers, a good farmer today is a farmer who engages in nonconventional practices including diversifying their operations and adopting conservation practices that reduce the soil degradation. As this farmer states:

> A good farmer today is the one who is not doing what is conventional, or the way it has always been done. You want to do the right thing, whether it is the easy thing or not. It might be the hard thing, but you are willing to do the things that you need to do to take care of your land, your animals, and your family. A good farmer is not the one who does the way that is super traditional, but really it is the farmer that is ignorant to old practices (12M).

He continues arguing that some farmers are misinformed that modern farming and nonconventional practices are less productive, which has caused some many farmers to remain hesitant to adopt new practices.

> Some people say all of the practices that we had implemented in modern farming are wrong but is not true. I mean, tillage is terrible for the land. And that is one of the main things that you think of a traditional good farmer, quote and quote. A traditional good farmer is going out there tilling up the land. They started doing it with a horse and cow and then they just got bigger and bigger tractors and more diesel fuel to continue to do it on at a larger scale, and it is terrible for the land (12M).

Other participants added that, although it depends on the person's values and beliefs, a

good farmer is the one who adopts conservation practices, it is one who cares for the land (whether it is growing crops or raising animals properly), improving the soil, and planting trees.

Whereas a few participants consider a good farmer as a farmer who is economically sustainable, most of them described a good farmer as the one that makes his farm environmentally and economically sustainable. “In my view, a good farmer is who balances between making profit and conserving the environment. It is not just financially managing the farm; it is whether the farm is economically and environmentally sustainable” (28M). In other words, a farmer who generates profit but also adopts environmentally friendly practices.

7.5.2 A Good Farmer is a Farmer and a Businessperson

Some participants described a good farmer as a farmer who makes good economic decisions, a producer who operates the farm as a business. They argue that agriculture is changing, and the ongoing economic changes are forcing farmers to adopt changes. A good farmer is the one who is a good businessperson and has good marketing skills and who can survive and financially sustain his/her farm. “A good farmer has to be a good marketer, a good businessperson. A good farmer can mean a multitude of different things” (15M). In this respect, according to some participants, a good farmer is a farmer who is still surviving despite numerous challenges that farmers are facing today. They indicated that to remain in business today, the farmer needs to deal with the significant stress that producers experience today due to the ongoing economic changes, globalization, and degradation of soil. To survive and remain in business, the producer ought to make wise business decisions. “I would say most people that are left on the farm

are good farmers. There are a lot of challenges. If you are not a good farmer, you will be selling it [the land] now" (35M). For these respondents, being able to maintain the financial viability of the farm and knowing how to manage the operation is what makes the producer a good farmer.

In this respect, as a good farmer is businessperson who is economically successful, this includes being innovative, adaptive, creative, and accepting changes rather than following the status quo. Respondents indicated that to be a good farmer, producers need to be open to new ideas, seek knowledge, and be willing to self-educate themselves. "A good farmer is the person that is going to adapt and accept changes. There are people that do some follow down for life [do status quo], and it just makes me scratch my head. What are you doing? We can prove that there is a better way to run a business here if you learn to listen and change?" (1M). Another participant provides an example of being innovative and thinking outside the box.

> Yeah, I think I have assessed the situation and I had a weed problem and I saw an opportunity to fix it but also had an economic benefit instead of going out there [and] paying money to kill the weed, I raised protein for humans from those weeds. So, I turned the cost into a revenue and at the same time brought another type of animals because my kids like having the goats around. And so, I mean, I think that was a pretty simple choice to make (12M).

Furthermore, some participants believe that a good farmer is something earned not inherited. Therefore, to be a good farmer, the farmer needs to acquire skills and knowledge and continue learning by practice. According to them, doing so will help the producer to survive and remain economically successful. Meaning that a good farmer is the one who better utilizes the available resources to improve the land and generate profit.

> I think a good farmer is something earned and not something that you can buy, not something that you can just inherit. I think it is something that over a period of time people will get to realize that you do things the right way, not overextending or going in declaring bankruptcy and taking money from everybody else for your own personal gain. That wouldn't be the definition of a good farmer. But somebody that can actually use the resources that are given [to] him to make something better is a definition of a good farmer (37M).

Moreover, to some participants, being a good farmer does not only mean adopting nonconventional practices, but also caring about the people (e.g., neighbors) rather than making money, protecting the land, and raising a good family.

Others described a good farmer as a farmer who improves quality of life for his/her family, maintains the farming lifestyle, and remains optimistic and moves forward despite the bad years. A farmer who is optimistic and believes that, despite the difficulty s/he is experiencing, the farm production will improve in the coming years. "And not just taking care of the land, but the communities and people around you, and to raise a good family and continue on every year" (20M). Another farmer adds that farming is a social activity and lifestyle, thus a good farmer is one who treats neighbors with respect.

> I guess another big one for me is neighbors treating people right, not being so focused on production. And tend to forget the people, but when we brand calves in the spring we have at least 30 people there it might be twice as many as we need, but it is a community thing, it gets the people involved that usually don't do it, that is why I say it is kind of a lifestyle (5M).

Similarly, some respondents defined a good farmer as the one who keeps the farm legacy. "A farmer who keeps the land as he was given, keep the family legacy" (14M). Thus, the characteristics of being a good farmer include maintaining the farm legacy, raising a good family, conserving the land, and generating income and profit. They acknowledged that farmers are heterogeneous and have different skills (e.g., some of them are better agronomists and other are better marketers) but their definitions of a good farmer have

many aspects in common.

When asked how important it is to be a good farmer today, most participants indicated it is very important. “I would say that is pretty important being a good farmer, because otherwise you won't be farming at all if you are not financially stable” (8M). These people define a good farmer as both a businessperson and conservationist. In fact, some respondents asserted that it is significantly important to be a good farmer and be financially stable because, otherwise they would not be farming today.

In terms of whether participants consider themselves a good farmer, most of them responded that if they were not a good farmer, they would have quit farming by now, especially considering the increasing economic challenges to increase their profit and sustain their farms.

> I consider myself a good farmer. I got a lot of things to improve on, but I am working on the improvement. The changes we made with our cash crops, and the changes we made with our crops and vegetation. I think this makes me a good farmer, and most importantly to farm in a way that maintains the God ‘created nature. We are doing the best we can (6M).

Despite his challenges to improve his land and operation, this participant indicated that he believes he is a good farmer who is constantly attempting to improve. The willingness to adopt nonconventional practices (including diversification and conservation practices) and improve the business both economically and environmentally is what makes the producer is good farmer according to some.

7.6 The Factors that Motivate South Dakota Farmers to Continue Farming

In terms of the factors that motivate producers to continue farming despite the ongoing economic challenges, participants described several reasons that motivate them

to stay in farming. For instance, some of them indicated that being in the countryside is a chance to raise their families. They described farming as a way of life. Some respondents appreciate the good lifestyle that they are enjoying in the countryside, raising their children on a farm and having them live beside their parents and learning a farming work ethic that help them become successful.

> We have the lifestyle of having our family in the country without a confinement of town. But I mean, we all work together, it was our family's work. The kids learn, they worked beside us. They think it made them very successful. All three of our children are incredibly successful when they got that from the ethics that came from being raised on a farm, in my opinion. That they couldn't probably get it in town. But I am saying my kids got it from being in the country, being with us (6F).

Working together as a family and having children learn farming skills and ethics of being raised on farm is a significant goal for the farm families. Besides, participants appreciate being away from town and enjoying the natural scenery. Producers' attachment to their land and having autonomy to decide what to do with their land and time motivate them to continue farming.

> Like we said, if you love it, the love of the land, and the love of being your own boss, and just being open having the fresh air. My biggest joy in the farm is when you have a nice Spring day and a new calf was born and you still wobbly and the cows going over the hill and the calf is coming behind. Man, that just makes it all worthwhile. Because it is new life. That is one thing man cannot invent, we can go to school and all those things that we do, but we cannot find the secret of life, you cannot (31M).

However, respondents also recognize that although they have the privilege and freedom to work by themselves and decide what to do with their operation and time without supervision from others, they also have an enormous responsibility. The responsibility of getting the work done and improving the business to generate more profit but also conserve the natural resources. "The privilege of working for yourself and it is also the responsibility, I have to get this job done, it falls upon me. But also, the opportunity to

plant the crop and see it grow, and to bring it to harvest. It is very rewarding" (33M). Thus, being their own boss means they have the responsibly to remain up to date and produce the best they can to support their families and improve the business.

Moreover, participants also indicated that the farming lifestyle, which allows them to work together as a family, encourages them to continue farming. It involves working outdoors and having no specified times and dates makes farming especially unique. According to them, it is the way they grew up and want to continue.

> I don't know, I guess I don't, we don't know any different. Because we really don't know what it is like to work an eight to five job and come home and not have anything to do. We know what it is like to work an eight to five job and then come home and work the six to midnight. So, we have always been this way. Even though we, maybe, have had a job, we have also worked on the farm at the same time and then the two together. That is the way we both grew up, and I don't know. Personally, I couldn't see either one of us living in town and being done at five o'clock we wouldn't know what to do with ourselves (37M).

Some participants indicated that the curiosity of what the production would look like in the following years makes them continue farming. They described their feelings of being always optimistic, and the curiousness and excitement that the production in following years is going to be better, encourage them to continue operating. The notion of following that dream year after year keeps them going.

> Oh, I think there is always next year. It is like, we are going get a right big crop price next year. It is like we are going to have that big crop; the cattle prices are going to be a lot better next year. Now that I made this far, and I have there for so long. It is like, you do like an autopilot. And the family legacy and now that another generation is involved, and they seem want to farm. So, now we are excited about the future. They have insurance and my grandkids are up here, so. And we are able to see that just about every day of the week because we are in business together and we are farming together. A lot of people are jealous of the relationship that we ever have with our children. The fact that we have our children and grandchildren so close by (14M).

In other words, the excitement of what the future brings, the willingness to raise the

children on farm and maintain family legacy by having new generations involved in farming and transferring those farming skills to them, motivates producers to continue farming. Besides, harvesting the fruit of the efforts that the producer has put work into over years to improve the land and increase the profit or accumulate some assets, makes the producer continue farming. As the following participants illustrates:

> Farming is enjoying, you go through the death part and you go through the life part year after year, and it just makes you who you are. And every year is a new beginning, there is a lot out there is here we got like so yeah. It is a way of life; it is a good life. I am sure there is people in town or whatever that they would have no desire to do what we do. But I think it comes down to that what you grew up with and your love for it (34M).

Other factors that motivate producers to continue farming include their willingness to improve their family's livelihood and provide healthy food for their families and consumers. Also, the feelings of being land stewards, taking care of animals, and seeing the result of their efforts momentarily, and the pride and/or proudness of being a farmer.

> I think there is a lot of pride. For me, I am working with the animals every day, some days I would like to ship everyone on down the road and then next time you are having those baby lambs, baby pigs, or baby calves. You spend the whole year preparing or whatever it is for that time, and kind of see your fruits of your labor. When I walk out the door, I am at work. You can see success. I mean, every single day, you complete a task. Like I can work at a job for five years and I can be working on one thing for five years and maybe see that success. But in the farming and agriculture, every day as you complete a task, we always see success, which is a good feeling, any plus we get to bring in life and, in this world, but really you are producing a plant. I mean, you are the best…like, that is something living. It is amazing (27M).

It includes the commitment to improve the land and the environment, the responsibility to feed humans (feeding the world, which some participants consider it as the way they impact the world), improving the livelihood of one's family, and making profit. "Farming is a good business. There is so much wealth in farming and ranching and probably what

is really making us do it" (10M). Besides, some respondents indicated that being challenged by the difficulties that farming involves in such as working in the field, fluctuation of prices, and uncertainty and risk-taking pushes them to continue farming.

Others are motivated by being in the countryside and feeling secure about living away from large cities. One participant indicated that part of the reason she and her family decided to sell their house in town and move to the country is because they want to live away from cities and enjoying farming, which she described as a way of life and a good lifestyle. According to her, rural areas are less congested and have less crime but more security and privacy, compared to the city where she previously lived.

> Part of the reason for selling the house in town was the law enforcement. There is a continued jurisdictional issue, unfortunately. So, but as far as in the country, there is a little bit of less crime and more security, I guess, being in rural areas is what I want to be, it provides privacy and the neighborhood community is of benefit and the land itself (9M).

Having privacy and being connected to the community in a rural area besides raising children on the farm where they learn farming skills and work ethic is one of the motivations for some participants to continue farming.

7.7 Community and Land Attachment

Most participants stated that they grew up on farm and live with their families and friends whom they attended school and church with, which encourages them to remain on their farmland and in the community and to continue farming, despite the constant decline in commodity crop prices and increase in input costs. They appreciate the community support, especially the fact that families, relatives, and neighbors help each other.

> We have a very good community, like my church there. Because that is where I have always been, and that is where I want to be. Our neighbors help each other all the time. The guy that was in here [at a store where the interview was held] a few moments ago will have a surgery soon and they will start calving here in 10 days. I will probably be over there helping them when he is got surgery (35M).

Having community support is crucial to farmers and their families. If the farmer is experiencing health issues or other circumstances, neighbors will often gather and help him/her with harvest or planting. Thus, community attachment strengthens the efforts of farmers to maintain their land and continue farming.

Even participants who do not have families or relatives in the area where they live and operate their farms (or operate the land that is away from their residential locations) still feel attached to the community where they operate. They appreciate the community support and are planning to stay in business for as long as they can due to the strong connections between them and the community and their attachment to the farmland to the extent that they consider their farmland as a home. Some believe that the entire community is connected as one family, forming a lifestyle that motivates them to continue farming. As the following participant states:

> We consider the place as a home as far as we live here, but we consider our operation as a business. Although we have no family history on this land and the community or neighborhood, but we consider it as home. It is only the only business in life that is important, and we are going to spend our life here on the farm. The community is very good here. I think as a community; we are like a family. People are kind up here in our neighborhood. Also, my wife has family close to us. I would say that it would be hard to leave this community. There are a lot of friends and good people here (13M).

Similarly, another participant indicated the strong community connections help them create business opportunities such as having the community come together during the shearing time, a time which different families and children form the neighborhood engage in social activities, and which he believes is a marketing opportunity.

> We lived there still plenty of neighbors helping neighbors less on the sheep side because we all invite people over during sharing time which is or lamb time. In the cattle industry people come over to like a branding, but as a community is that we don't feel like people are not supporting us and we can talk about sheep we can market lambs we can actually do mutton busting within the community for their entertainment event for the rodeo. So, people have accepted us, neither my wife nor I are from this part of the state, but we have been embraced by the community (10M).

Despite not being from the area where their operation is located, this interviewee believes that his community has made it special to them so the extent that they do not feel strangers in the area.

While some participants appreciate the strong connections between their families and the community, especially the role of that the community plays in their decision to stay on the farm, others have expressed disappointment that their neighborhood community has changed. Some producers are unhappy that many of their close farm friends (who used to help each other and have gatherings periodically) have sold out their farms and moved to other places, while the new neighbors are not as sociable as the old ones, or less interested in associating with the old neighbors. As this participant indicates:

> I have no intention to leave, the community is important. We all find our own friends and everything, although it is not like it used to be. Every neighbor was a good friend, it is not that way anymore. We have new farmers here; you might have somebody moved in who you don't even know. I mean, it is a community thing, but the community thing got to be a bigger thing. I mean, you might have friends in Sioux Falls, and you meet them, but you might have friends over here and you might not even know this guy across the road. And I mean, it is the way it is, because your interests are different. They don't have the same goal. Years ago, everybody was the same, farmers have had the same way of life. They were all the same. So, everybody worked together, and nobody said too much because you were doing it, they were doing that, but now it is not that way (18M).

This participant believes that the lack of interaction between new and old neighbor might be because they have different goals. He feels that farmers and their neighbors are competing with each other instead of helping one another and creating connections that

farmers need, which are helpful in difficult times. However, despite the declining interaction between farmers in their neighborhood and the rising competition between farmers, the respondent states that he and his family have no plan to leave the farm because they still have a few good neighbors.

Having different individuals coming to the community, especially those who some producers believe undermine their will or rights to engage in certain practices (e.g., having less autonomy to adopt different practices using manure because their neighbors react) has frustrated some old neighbors. According to the following participant, some new neighbors may oppose the older farmer's attempts to diversify into some nonconventional practices such as bringing in pigs (which they claim smell) or other activities that they do not appreciate.

> Now it is more sort of a competition, and you hear words like "my property values," things like that. Somebody moves in here and they don't want you to do something, or if you happen to haul some manure, someone is not happy. Everything has changed, so your community has got to be broader and different people. What it is gotten to be is not what I want to do, it is what my neighbors will allow me to do. And it is got to be huge on that, and we see it all the time. That is why we have a feedlot like I said. If you do a good job, like you do different things. If you are constantly screwing things up and causing problems, and sometimes there is nothing you can do about it. So, they dictate your work and certain things you can't do, they say pigs will all smell (17M).

Moreover, a few farmers (especially those who have fewer ties to the land and the community because they did not inherit the land) stated they have no intention to stay in the community. They indicated that nothing about the community makes them want to stay. Perhaps, the only reason that will keep them in farming is that they run it as a business and do not want to leave behind what they have built up for years or decades.

> I don't think nothing is related to the farmland or the community that makes me stay on the farm. Not that I will leave this community, I am not saying that. One

> thing about farming, which is kind of, it is a business, you should think in a business way. When prices [the land prices] are high you could sell your ground and wait it out and buy ground somewhere else. But once you build up, I guess you have so much, whether it's emotional or financial or whatever. That is why I guess the person should continue to stick with the community.

However, if someone who wants to buy the land comes with the right offer, they will sell the land and move to cities or buy other properties that are more profitable.

Furthermore, some participants have expressed their frustration about the continuing decline of the rural community and the increasing challenges to retain their neighbors in the area. They argue that while the South Dakota state population is increasing, and the large cities are growing, the rural community, on the other hand, is losing a significant portion of its population.

> More and more the role that farmers play in their local communities is increasing, but all that they said or whatever sort of show that South Dakota is one of the few states that have grown in population here in the last, I don't know what time period it was. I think that is ridiculous in many parts of South Dakota, so that is so far from the truth. Small communities are shrinking every month. I mean, and yeah, Sioux Falls, Brookings, and Rapid City are growing, but I can tell these little towns like mine are all dying (15M),

Farmers depend on family, neighbors, and peer support. Thus, the community shrinking poses some sort of threat to the community. Besides, for farmers who rely on hiring individuals to help them out with operations it can even be further challenging to find workers.

Due to the community connections and the family legacy and lifestyle they have, most participants indicated that are planning to have their children continue their family legacy, however, only if their children are interested to stay in farming. "So, I have five children and a wife and our current plan as a family is to transition into a 1900-acre ranch that we transition to our children. It will be a generational ranch for as long as it can it

can support our family" (10M). Even those for whom their children are not currently expected to return to the farm, stated that they are still planning to reserve the land for them so that one day they might change their minds. "But we'll see maybe they might change their minds one day. Even for us [him and his brother] although we keep educating ourselves trying to increase our profit, but it is challenging" (19M).

Similarly, those whose children and grandchildren are not expected to return or not are ready to take over the farmland, indicated that they are planning to rent the land to their relatives to keep the land in the family. "It would be nice to have a grandson, or someone come in and farm but, otherwise we got relatives close by that probably rent it. We just want to keep it in the family, we don't want to sell it" (35M). If no one from relatives is willing to take over, many stated they will only sell it to other families not corporations.

However, those whose lands are not family inherited or not concerned about family history, especially those who operate as a business conceive no problem in selling their lands to anyone and moving out of the farm. They will sell it to whoever comes no matter whether they sell it to a family or big farm corporation. A few of them indicated that it would depend on the corporation that wants to buy it, or its mission and goal.

7.8 Perceptions of the Community toward Farmers and their New Role

Participants were asked to express how the community including their family members and neighbors would describe their role as a farmer after engaging in nonconventional practices. They described several characteristics that they believe, or expect, that their neighbors and the community would describe them. Some of them stated that the community around them will describe them as business managers or

business owners.

> I guess they would say that I am a farm business owner. I think the term farmer is slowly going to phase away. And you are just going to become a farm business manager almost to make it like a technical term, just like everything else has took a small job. And now you give it a title. But it is a more of a descriptive title (3M).

This participant states that the term farmer will soon be replaced with businessperson. Others indicated that they expect that their neighbors will describe them as innovative, responsible, entrepreneurs, hardworking, dedicated, self-confident, and risk-takers. For instance, one participant describes:

> I enterprise three different entities. I ranch my own cows, my family's cows, and I have a registered operation. Which are all I am running on my farmland. I have an accounting firm where I have about 300 clients that I take care of, I did work for tribal entities, I do a lot of stuff (11M).

Another respondent states, "I would hope they would say that I am innovative. We have been involved in the community and many people respect our role as new model farming business" (19M). Besides, some expected that the community around them will describe them as community and public server, kind, and caring.

Moreover, respondents expected that people in their community will describe them as individuals who think differently, land stewards, educators, kind and caring, leaders, committed to their communities, and sociable. As the following response states:

> I'm a director, I have been on boards memberships. I have been on the board of several community groups, and active in nonprofits and community organizations and, the fire department, if you will. I have also been on the school board, and 4-H and stuff like that, I mean we're pretty involved and supportive, so yeah (24M).

Most of the characteristics that participants expect that people in their community will use to describe them can be summed to three large characteristics such as being kind, caring, to land, animals and humans; being innovative, business-oriented and

hardworking; and being an educator, leader, and public server.

7.9 Farm Values and Ethics have Changed

Farming values affect farmers' decisions to adopt on-farm diversification and other nonconventional practices (Lamarque, Meyfroidt, Nettier, Lavorel 2014). Values are part of farm identity that motivate farmers to adopt new practices. Values of farming also influence the goals and social connections between farmers. Farmers often receive enormous support from their neighbors which makes them successful. They work collaboratively and do not only form work relationships but family relationships and ties. As some respondents indicated, social connections between them and their neighbors make them feel as one family. Besides, without the support from their neighbors and local communities, farmers would face even greater challenges.

Now, as the ongoing economic changes and globalization and technology are spreading, farmers expressed concerns that these factors have affected the social relationships and ties between them. Some expressed disappointment that the traditional values of farming and farmers in their communities and neighborhoods have changed. More specifically, the social ties and connections between farmers such as helping or supporting each other and regularly visiting one another have changed.

> That is one thing that is probably changed, from 30 or 40 years ago. Because when I was growing up, neighbors are always calling over to neighbors and we were always just going over to visit and I don't know what is happened, or if it is anything specific but people just don't do that like they used to. And I don't know if it is not us, and it is not them, it is just different. I mean, but I think people are just busier. I mean, sometimes we go to town to see our neighbors that are two miles away and we haven't seen him for six months. I mean, we get along with them. It is just what it is, you see them at ballgames or stuff like that. It is just more things for people to do, I think (38M).

Another participant explains that as the relationships and ties between farmers continues

to loosen, and the economic situations force farmers to focus more on the economic aspect of farming rather than the social and cultural aspect of it. Farmers are thus increasingly frustrated about the lack of contact between them and their neighbors. This is particularly true among the older farmers who used to have strong ties and connections with their neighbors. For example, the following participant expressed his concern that neither the old neighbors don't still communicate with them as they used to, nor do the new ones tend to establish social contacts with them.

> There is two different sets and neighbors we have. We got the neighbors that we got these days, and there are old neighbors who have moved out after retirement. But we had the kind of the older neighborhood before which was excellent, excellent. They grew up through the tough times and love the land, loved neighborhoods, loved being together. Not like what it is now, but now everybody is on a fast-paced. It does not feel the neighboring like it used to, even in our neighborhood. And that is what is sad. I like the other part where if it rained, you would go to a neighbor have coffee and then the phone rings and you go to another neighbor somewhere. Now you don't do that (35M).

Participants argued that farmers used to stay connected and help each other during the difficult times. For instance, when a farmer gets sick or experiences social circumstances that prevent her/him to harvest their operation or take care of livestock, neighbors will gather and help. Social connections and ties have provided enormous support to farmers in the past to the extent that even if producers did not generate adequate profit, they were less interested in leaving the farm because of the community. However, according to participants, the situation has changed, unfortunately due to the increasing jealousy and competition between farmers and perhaps globalization and technology.

> This was the type of legacy we grew up with when we were kids and even after we became adults. It was a good legacy. Some of it is because of competition and jealousy but I think it is just the fast-paced of life now. It is just a different life now. The phone, I don't know, the computer. We used to have good neighbors, but they moved out and now we have new neighbors who we can't even talk to. We got neighbors that have come back that don't even want to talk to us. I mean,

> you go and say, here is a cup of coffee, they just throw it in your face. They want to be by themselves out here in the middle of nowhere (17M).

Farmers who are experiencing economic changes and who previously relied on community support might not stay in farming and the community due to the increasing decline in social relationships.

As stated previously, farmers have indicated that farming values have changed. Despite some farmers having indicated that the effects of being less socially connected does not currently impact them significantly, they expressed their concerns that it will affect their communities in the long run. In the past, some farmers who experienced hardship of making a profit because of the weather, health, or economic challenges used to receive social support from their neighbors and the community but as jealousy and competition between farmers continue, participants indicated that some producers may leave farming and relocate.

7.10 The Effect of Diversification on Farmers' Identity as Farmers

Participants have expressed different perceptions about the impact of on-farm diversification and adoption of agricultural nonconventional practices on their identity as farmers including their family legacy and history.

7.10.1 Adopting On-Farm Diversification Reinforces Producers' Identity as Farmers

Most participants indicated that engaging in on-farm diversification does not eliminate or reduce their identity as farmers but, instead, it reinforces it. "I think it reinforces my identity. It is a normal development, ten years ago I wouldn't dream about what we have been doing in the last six years" (1M). They argued that adoption of on-farm diversification and other nonconventional practices is a normal progress in agriculture. Otherwise, they would not be farming today if they did not adopt

diversification. According to these participants, adopting on-farm diversification has helped them run the operation as a business: “we never imagined that we would be sitting in an office doing an interview on a working day, in the afternoon right here. I think that is valuable and that is great, that is awesome” (2M).

Even the respondents who stated that adopting on-farm diversification has impacted their identity as farmers, including their family legacy, have emphasized that adopting new on-farm diversification reinforces their identity and helps them continue their family legacy and identity by improving the operation and generating adequate resources to economically sustain the business and better transform it to the next generations. Nonetheless, some participants indicated that maintaining their values and beliefs and passing them to the next generations is more important than being concerned about maintaining the traditional identity itself.

> It is different than what's been done in the past for sure, it affects the legacy and history of my family in a positive way, it makes it better, because as I said we can’t continue farming the way it has been. Traditional or conventional farming has to end. I mean, the traditional identity of farming has no place. Farm legacy is when you are able to progress and the values you own, not how you parents did the business. I mean, the traditional legacy, like the way my parents farmed does not work today. Like, they did everything, and it was hard. Technology was not there; they didn't have the hydraulics and all this stuff. So, what is important is your beliefs and values, not the faming identity itself. It will be bad if the changes I make affect my beliefs, which they don’t, or affect my decisions to operate or manage (16M).

This means that if on-farm practices that are adopted affect the farmer’s own beliefs and values, that might be a concern. However, if it affects the family legacy and history of farming, that is less concerning to some respondents.

Furthermore, some participants refer to farm identity and legacy as the way the producer treats other people in the community and the way s/he treats the animals and the

land. Thus, according to these respondents, adopting on-farm diversification does not affect their identity because it does not impact the relationship between farmers and their neighbors as well as their natural environment. They argue that although they are not farming the way they families did in the past; it is because traditional farming does not guarantee the economic and environmental sustainability of farm businesses today.

> I don't know if we are getting rid of the legacy, we are just farming in a modern way, different economic and environmental circumstances force us as farmers to think differently compared to old farmers who did not go through the current technological and competitive farming life and business. We definitely have to be more diversified. What is driving farmers is their thinking of how they are going to market their products without having an entrepreneurial mindset to build networks and become innovative. So, building that network, again, and I that is what you are getting out of an entrepreneur side of things, too, they are also building that network (28M).

In other words, many participants asserted that conventional farming does not support their beliefs and values which have greater impact on their business decisions. Therefore, adoption of nonconventional practices is necessary to transform the farm business into a modern business that adopts the principles of entrepreneurial agriculture while maintaining the family history and legacy.

Some respondents believe that adopting nonconventional practices does not affect the identity of farmers because the producer still runs the business on the land, thus the attachment of farmer to the land or his/her existing connection with the farmland remains unchanged. They asserted that engaging in on-farm diversification reduces the chances of the business being terminated due to the increasing financial strains. It also creates new opportunities to bring all farm family members to that farm to work instead of having some of them working off the farm to provide extra financial resources to support the family. For instance, some participants indicated that they need to have their spouses

work off the farm so that they can pay off their debt or afford health insurance.

> I think the changes we adopt make farming better, because if you run it like a certain business, you have got boundaries and set goals and you have got a way to bring in family members into the business. They become a partner later on, or something like that. I think that connection to the land and the family business would be even farther, and instead of thinking like, oh my god, we have a lot of debt, or how we are going to make the land payment this year or, your wife is going to work 50 to 60 hours in town so we can have health insurance. Which one will you rather have? The instability of doing the status quo or having a real structured business, farm being ran as a business that has a plan to do take care of the standard family members. Kind of like shareholders (24M).

According to the above participant, farmers have two options, either to adopt nonconventional practices and remain in business or stick with traditional farming to maintain their identity as farmers and experience significant economic challenges.

Also, as the following participant adds, the next generations of their farm family will not be concerned as to whether he and his family maintained their traditional farmer identity and the family legacy, instead they will be concerned about whether the business has survived and adequate financial resources are provided to them to sustain the family business and maintain the land.

> I think it affects the legacy and history in a positive way. I hope a couple generations down the road hopefully if all goes well, my grandkids, or my great grandkids are going to say, boy he did a pretty good job. He moved the farm to a lot better ways of doing things. They might look back and think I am idiot, I don't know. I hope to be able to maintain the land and to regenerate resources, that is my hope (17M).

Again, improving the business by adopting nonconventional practices is important to participants, it increases the chances of farmers to create better opportunities for the next generations. "Yeah, the changes, everybody's going to leave their mark on the land. You are going to operate a piece of property for 50, 60 years, of course, you are going to leave

a history and the legacy there" (15M). But also leave a better history and legacy to their coming generations.

In fact, some of respondents indicated that the legacy is knowing how to survive and sustain the farm, no matter what practices farmers are adopting. For instance, adopting on-farm diversification to increase the financial viability of their businesses helps them to maintain their identity as farmers and to continue their farm legacy and history. Thus, farmers believe they are not disregarding their farmer identity, they are only adjusting it so that it fits the new and modern farming needs or conditions.

> We are still keeping our identity. It is just that sometimes you have to change your legacy or identity from what your dad's legacy was. Adopting new changes doesn't mean that you are changing the identity, you are just making it to fit the new environment or to situation. Farming is in your blood; you can never get away from it (20M).

Again, most participants believe that adopting on-farm diversification is an ultimate requirement for farmers to survive. It creates a new identity (entrepreneur identity) which producers believe can coexist with the traditional farmer identity that focuses on maintaining the farm legacy and history. These respondents argued that farming is in their blood, thus adopting on-farm diversification does not significantly affect their identity as farmers. They asserted that for the two identities to coexist, the producer-farmer identity needs to be adjusted.

7.10.2 Producer Identity is a Slogan that Some Farmers Use to Gain Publicity

Moreover, some respondents believe that the concern of some to maintain their traditional identity prevents them from adopting any diversification practices. They believe that farmer identity is only a slogan that some farmers use to market their products and gain publicity. Some participants indicated that they do not believe in

traditional farmer identity. As the following participant explains, farming has changed throughout generations, and farmers' identity has been changing as well.

> Yes, I think no change whatsoever can prevent me not to take new opportunities or make new changes, never, because one thing I found this is that they [farmers] used to say big farm, corporate farming. There is a smallest farm here and the biggest farm here and they are all whole bunch in between. To me, there is no such a thing as a corporate farm. It is the smallest, the biggest, and everybody's in between, and there is no identity. They use that [identity] probably is more for marketing, publicity, whatever. So, I don't want to get into that. Because people have changed through time. And you don't have to be a corporate farm to farm 30,000 acres (17M).

He adds, farming has changed through time, thus farming identity is going to change regardless of whether farmers adopt on-farm diversification. He argues that as the aging population of farmers is increasing and younger members of farm families are less interested in farming, thus traditional farm identity will diminish, and farmers are going to be compelled to sell their farmlands.

> Your identity is going to change anyway, when you get to a certain time and age, because you are going to sell that land or rent it off, somebody's going to have it. Especially, now that many of our children as farmers do not want to come back to the farmland, they see the challenges we face as farmers. So, whether you like it or not, your legacy, identity, or whatever is going to change one day because even if your children would come back to the farm, your grandchildren are not going to come back. The technology and globalization attract these kids who want to work in high tech companies rather than sticking around the farm and struggle like we do. And far as other things, maybe wind power, agritourism, or something else, you are going to invest in anything that brings money. Now, I am not worried about how changes I make will affect my identity, because life is ever changing. How many people are invested in with groups doing different things right now? They are not in their own little that they are part of the global community. So, everything that affects the larger cities affects us in rural South Dakota, too (18M).

He argues that even if the children of farmers return to the farm and continue the legacy of farmers, producers' grandchildren are less expected to remain on the land. Therefore,

as technology is increasingly becoming the driving factor in the farming business and the increasing globalization which makes the farm business more competitive, the identity of farmers will inevitably change. Because, to survive, farmers are expected to adopt anything that improves the financial viability of their businesses.

The following respondent adds that he is not concerned about his identity as a farmer and that he runs his operation as a business. Because he does not have a strong tie to the land and the community, and he did not inherit the land he operates from his parents. He has no family heritage that represents his identity which he might be concerned about preserving it. Neither is he concerned that in the future, his children are going to farm the land he operates.

> I do not have strong connection to this place because I just bought it in 1982, so I don't really feel tied to it. We are not really that tied up in heritage. So, if my older son is got a good enough job, and he doesn't need to come back, we might put it up and sell it. I will sell it and go up to more appropriate site. But certainly, what we are doing is we are finding out what we can do, and what we can't and, every farm is going to be unique to itself (8M).

Thus, according to these respondents, operating land that was not inherited from the family and having no children planning to take over the farm in the future, makes some farmers feel less attached to producer identity or less interested to preserve it.

Other participants described traditional farm legacy as meaningless because they do not think their parents were on the farm long enough to claim heritage and farmer identity. One participant argued that the goal of his grandparents for purchasing the land that he is now operating was to make a living, not to constitute a farmer identity. However, he stated that that does not means abandoning the entire farming history of their family. In other words, he does not believe that there is a traditional farmer identity or legacy that deserves trade-offs to maintain it to the extent that farmers are hesitant to

adopt nontraditional practices.

> I think the traditional legacy is kind of silly, because if you think about it, we haven't really been here that long. My grandpa's parents were brought here on the wagon train that is not that many generations ago. And when they came here, their only goal was to make a living and carve out an existence. So, to act like our tradition and all this stuff needs to be sustained, I think is kind of silly, it is. The point is that, I mean, I don't want to throw the baby out with the bathwater and say that let us get rid of everything traditional. But I think the point is that you need to make a living. If you are going to farm you need to think of every way possible to make a living, but without obviously damaging the environment or anything like that. There are obviously moral and ethical obligations, but you need to think about making money not just, I think the tradition and legacy of farming is not as important as thinking how make a better living. It is the fact that we are always changing, there is no tradition in agriculture, it has to change constantly (29M).

His argument is that farmers need to adopt changes, develop the business so that they can increase the profitability of their operations to support their families and sustain the farm. As the following participant adds, being left behind can cost the farmers the price of having to leave the farm because of the ongoing economic challenges.

> You get emotionally attached to something, and you see that a lot near agricultural where people are emotionally attached to practices, you'll be left behind if you are one of those people. Again, I am not saying that we should throw away the whole farming identity, but we should be open to any modern ideas and technology (27M).

Despite the assertions of participants that traditional farming hinders their ability to become economically successful and remain competitive to sustain their business, producers indicated that they do not intend to abandon their traditional farming history and legacy. This means that they are planning to adopt whatever changes that can help them succeed economically and improve their profit but simultaneously preserve the social and business aspects of their traditional farming.

7.11 Conclusion

There are different ways that participants got into farming, which influence the way they make decisions about their operations. Participants also used different characteristics to describe the meaning of farming and their perceptions of personally being a farmer today. They indicated that a good farmer identity has changed over time from and that a traditional good farmer identity is outdated. In other words, most believe that the traditional and conventional farmer identity is obsolete. However, at the same time, participants asserted that the traditional family legacy and history of farming are important and can't be entirely abandoned. According to them, farmers operate in a unique business environment, unlike, many mainstream businesses.

Respondents believe that the farming business is a lifestyle, and agricultural producers are affected by their attachment to the land and the community as well as the family legacy and the emotional ties that exist between the farmer, the land, the community, and the practices they are engaged in. Therefore, although most participants indicated that they consider themselves businesspeople, the majority of them stated that they identify as both farmers and businesspeople, arguing that the two identities (producer-farmer identity and entrepreneur-farmer identity) are inseparable or can't be detached. Nevertheless, they asserted that farming identity is constantly changing and that farmers need to adjust their traditional producer identity and adopt on-farm diversification and other nonconventional practices to remain in farming, or else be left behind and forced to leave the business. Adjusting the traditional farmer identity also allow farmers to secure financial resources that can allow them to remain in farming and, therefore, retain their identity rather than lose it. Some participants even stressed that

what is important is not to maintain the farmer identity itself, but the values and beliefs that the producer stands for, which s/he tends to pass down generationally (see the conceptual framework map in Appendix B).

CHAPTER EIGHT

THE IMPACT OF WIND FARM DIVERSIFICATION ON FARMERS' IDENTITY AS FARMERS: A CASE STUDY

8.1 Introduction

This chapter addresses the impact of diversification into wind farming on participants' identity as farmers including the traditional role that they play in the community and the meanings they attach to themselves and their practices, and the way the community perceives them as farmers. More specifically, the chapter includes general description of some of the wind farm diversification practices occurring in South Dakota based upon the statements of participants, and the factors that motivated them to adopt windfarm diversification or to lease their farmlands to wind energy corporations. It discusses whether the primary motivation of participants to adopt wind farm diversification was to generate income and profit or to improve the environment by producing clean energy.

The chapter also highlights the status of the wind farm (developed, under construction, proposed) and the length of time that wind turbines have been on their lands. Additionally, the chapter addresses the benefits that participants perceived and the challenges they experienced as a result of adopting wind farm diversification including community reaction to the wind farm and strategies that they used to deal with it. The chapter concludes with the impact of wind farm on participants' identity as farmers including their feelings about the landscape and their relationship with the farmland.

8.2 Farmers' Decision to Adopt Wind Farm Diversification

According to some participants, adoption of wind farm diversification began after the wind farm company approached the farmer (sent letters to participants in mail) and visited the farm. Upon the visit, the wind companies typically conducted an assessment to determine whether the farmland met the criteria to establish wind projects. The company then offered the deal to them and the two parties engaged in negotiation. "They came to my farm and they looked at the place, and they said it is a very good place to put wind turbines, then we talked how to make it happen" (14M). However, prior to accepting the deal (or even before the wind farm approached the producer), many participants indicated they consulted other farmers in wind farming to understand the contracting process and the potential impacts of the wind farm on their operation. Specifically, learning about the nature of the contract and the magnitude of the possible impact on their farmlands, habitats, and their identity as farmers. "There is actually a wind farm north of us about 15 miles that was established about 10 years ago. I went and talked to some of people there who have wind farms on their properties, and they thought it was a good idea to earn extra income" (33M).

Based on the gathered information, the indicated participants made the decision whether to adopt wind farm. "When I was approached by the wind farm company, I was all for it. They lease the ground and pay us annually, and we signed a twenty-year contract. It is a good little side income anyway" (35M). Prior to signing the contract, some participants also communicated with their neighbors to ensure that they were not the only ones who were signing up for the wind project. Part of that was because they wanted to eliminate the chances of the possible reaction from the local community. "We

kind of talked to the neighbors and I guess most of them were going with it. If we didn't, other farmers in the area will do and take the money. They [wind turbines] are going to be there anyway. So, that is what made us decide" (36M). Some participants asserted that they were cautious regarding whether they were making the right decision and didn't want the community to view them differently. However, they also believed that regardless of whether they accepted the wind farm or not, other farmers would adopt it, thus someday the wind turbines are going to be built in the area regardless of their approval or consensus.

Some participants were delighted to have the opportunity when it was offered to them, although many participants found that accepting the offer or signing up for a wind farm is different than actually having it built on one's land. The wind company determined, based on the appropriateness of location, whether the farmer will have a wind project developed on his/her farmland. If the farm ends up getting the wind turbine, the wind farm company will inform the landowner about the next steps.

> We have to be located in an area where they wanted to build wind farms. Well, I suppose about ten years ago they started approaching people in the area about leasing their land and the wind rights on that land. And some people did not like the idea, so they didn't sign up, we did. And looking back, I guess I am glad that we did cooperate (39M).

Some mentioned that other participants signed the contract, but their lands were not selected because of being away from places where the wind blows excessively, or their lands fell out of the order in which the wind turbines are expected to line up. Thus, some farmers who expressed interest ended receiving a few or no wind turbines. In other words, even participants who signed for a certain number of wind turbines on their lands received fewer than they actually signed up for because the numbers can later get

reduced. Nonetheless, according to participants, in many places, producers who did not get turbines because of the above issues often get paid the full amount for each wind turbine they signed up for.

Furthermore, some participants had signed up for wind turbines but due to the intensity of the community opposition, the companies plan to have wind farm did not succeed (as the entire wind project was turned down). This was the case in some South Dakota counties such as Lincoln County and Clark County where, because of the disapproval by the grassroots groups who campaigned against the wind farm, no wind turbines were installed. In these counties, farmers who signed up to have wind turbines on their lands do not get paid, unlike farmers in other places with wind farms.

Once the wind farm company decided that the land met the wind development criteria, or it is in an appropriate location, the two parties sign the contract. The contracting process varies from one wind farm company to another. Some wind farm companies have contracts that go up to 36 years with possible extensions, "it is owned by the company. The total contract is for a 36-year lease. Of course, the lease can be altered at any time. You know how that goes through the wall on all that stuff" (32M), others varied between 10 to 31 years.

In terms of the length of the time since the wind farms have been established on the participants' lands, most of the wind turbines were constructed within the last five years. For instance, turbines on two farms have been operating for last three and half years, while others were built on one farm in the last two years. Two others are under construction (started in late summer 2018). They were built on two interviewees farms ten years ago. Regarding the number of wind turbines on each participant's property, it

ranges from one to ten wind turbines (mostly three to five turbines), and the amount of money that is paid annually is set based on the capacity of the turbine to produce power. According to participants, most of the wind turbines installed on their farmland are producing 400 watts of electricity, and the payment is $10,000 each year per wind turbine.

Moreover, there are different wind farm companies with different policies in the state of South Dakota. For instance, one participant indicated that some wind farm companies lease the farmer's land to build wind turbines and later partially own the land where the turbines are constructed. In other cases, the farmer always remains the owner of the land and the wind farm companies only pays him/her the lease payment (or for using the land to install the turbine and produce wind energy).

> There is all kind of these different wind farm companies. There are some companies that have different set of the ways they operate. Some companies in the northside of the state take a lease payment, but then they eventually become partial owners of them. And there are different ways it is all set up. The way ours are set up is different, we own the land. We will always own the land and we get to every year release. Well, it is an extended contract for 36 years, but it is a lease payment for the use of the land, that is how it is set up (32M).

According to this participant, while some companies might engage in partnership with landowners and invest in the wind farm for an unlimited amount of time, other farmers still have the full rights to their property, and the wind companies pay them each year based on the lease agreement that they sign.

8.3 The Motivation of Farmers to Adopt Wind Farm Diversification

Different factors motivated participants to adopt wind farm as form of on-farm diversification. While some participants stated that their decision to adopt wind farm diversification is exclusively economic, others asserted that improving the environment

and, at the same time, increasing their profit is the motivation behind their decision adoption of wind farm. Despite some participants assertion that they adopted wind farm diversification for environmental reasons, none of them, however, exclusively adopted it for environmental reasons. They often stated that the primary reason was economic. Other participants have adopted wind farm because of their life changing circumstances such as age, health, and the difficulty to find labor for their farms.

8.3.1 The Economic Factors

Although the motivation of participants to adopt wind farm diversification varies, the majority of them indicated that they adopted wind farm diversification primarily to increase their profit and economically sustain their farms. Specifically, many interviewees asserted that the reason for adopting wind farming is to recover from the recent loss of farm revenues due to the increasing decline in crop prices and the increase in input costs. These participants indicated that they are faced with tough choices, thus they welcome any opportunities that will help them increase their profit and remain in business. For instance, the following participant describes that he and his family went through a severe dry year to the extent that they had to work off the farm to remain in farming. Therefore, having a wind farm developed on their land will help them sustain their farming operation.

> We recently had seven years of drought and it was to the point where I was almost was going to have to sell the farm, and so we took part time work off the farm and did it for a couple of years to pay off what we owed, and kind of got us through the drought period and got back into the farming and gave up the part time jobs (33M).

Other participants who did not get wind farms developed on their farmland because of opposition from the local community expressed disappointment for having the wind farm

turned down in their areas at the time in which commodity crop prices were significantly low. “We went through the whole farming challenges because things are not going well. So, we are trying to recover as farmers. So, what does that look like? The wind would have been a nice extra income to make off what we already have” (37F). The same participant stated that it would have been a significant opportunity to increase their profit and remain in business.

> The commodity crop prices are going down every day and farmers are faced with tough choices. It helps us to support the input prices and have some money aside. Even if the season fails, we would be able to plant the following season. So, it helps a lot, it would have helped a lot in that. So, this complements what we are missing out of crop prices. You are getting cash money without having to pay any inputs (32M).

Even if the traditional farming activities such as crop and livestock production fail in certain years, wind farming helps farmers to secure funds to purchase inputs for the following year(s). As the commodity crop prices continue to decline and production costs increase, farmers are expected to borrow more money from financial institutions to purchase inputs.

8.3.2 The Environmental Factors

Furthermore, some interviewees who have leased their farmlands to wind farm corporations indicated their motivation to adopt wind farming was both economic and environmental. These participants asserted that, besides improving their farms economically, improving the environmental sustainability by hosting sources of renewable energy is also a factor that inspired them to adopt wind farm diversification.

> For me, the primary reason for having a wind farm is the economics of it, it is another income source, but I am also pro-environment. I think it has long-term environmental benefits. I think to have another source of energy is good environmentally. It costs a lot to develop a wind farm but over the

> long-term, it will benefit. I think it is another source of producing energy, renewable energy (34M).

The following interviewee provides further details. He believes that wind power will play a significant role in the future because it has limited impact on the environment and the community, compared to coal generated power which he believes will not sustain for long.

> I didn't feel there was really much downside to the environment, to the community and whatever. I figured that it has a lot of benefits. We thoroughly enjoy electricity and it seems like coal generated electricity is maybe not going to be here forever. So, we need to be looking at some other ways to generate electricity. The demand for electricity is at this point is only going to expand. So, I just thought that it just seems like a win-win situation (39M).

According to him, the demand for electricity is expected to increase, therefore he believes adopting wind farm diversification contributes to the future availability of clean energy.

Consumer patterns are also changing, and some energy consumers are leaning toward renewable energy. "It comes to the point where the country, the consumer is dictating the market, they want green energy" (35M). According to this participant, consumers dictate the energy market as many consumers are becoming pro-green or renewable energy.

Additionally, the following participant believes that some of the large tech corporations are becoming interested in using green energy more than power that is generated through nonrenewable energy sources, which reduces carbon emissions both locally and globally. However, the financial aspect of the wind farm is also a significant motivation to them.

> Amazon put their servers there. There are big companies that are looking to use that renewable energy. So, there is definitely that market for more energy, for more clean energy. They call it green, so they can be called

> green. And like, Google is another one too, they want to make sure they are doing what they can to be risk free. But the money part, when you look at it, it is easy to save money (38F).

This participant indicated that the need to produce renewable energy is increasing, thus there will be more market for wind energy in the future. They argued that some corporations are shifting their energy sources to green energy, which increases the demand for wind energy production.

8.3.3 Life Circumstances, (Age, Health Issues, and Lack of Workforce)

While related to economics, factors such as age, the lack of workforce, and health issues have also played a related role in the decision of some participants to adopt wind farm diversification.

> Yes, the reason [he wanted to adopt wind farm] was economic. I wanted to increase my income, but also it was because of our family circumstance. I am getting retired soon and the wind energy would help me not to worry about having no money to pay for input costs, and also to have some money in my pocket as I will not be farming because of my age. Even if I do, it will be just for fun. So, those two factors are both important to have a side business like wind energy. We were so much into the idea and we feel it was going to be a big financial relief. (14M).

Getting close to the retirement age and being physically less capable to perform some farming tasks (that a typical farmer carries out) have forced the above participant to try to change his farming operation and incorporate activities that are more easily manageable and require less physical effort. However, he did not succeed because the wind farm in the areas was turned down by the grassroots opposition.

The changes in life circumstances such as age also created the need for labor for some participants, which has also motivated them to adopt wind farming. The issue of finding labor (which is also reported as a driving factor for participants to adopt wind farm diversification) can be challenging as the farmer gets older and there are no family

members to help with the operation. “I am part time on-farm I would have to say, because of my age, so I only work part time on the farm” (39M). Some participants indicated that they are aging and there are fewer children on farm to help with farming activities and to take over the farm after they retire, thus they are faced with tough choices regarding managing the activities and bring more innovative ideas to sustain the farm.

Moreover, some participants indicated that they are experiencing health issues that have forced them to diversify into wind farming so that they could remain in business. The following participant is planning to retire but he is holding off on his retirement until the wind farm project that is under construction on his land is completed so that he can start receiving the payments, then retire. He is experiencing health issues, which makes him unable to operate the farm by himself. He depends on his son who rents part of the property, because he is unable to make a living and provide for the cost of healthcare.

> I have some health issues. I lost my left eye in 2007….so, I can't run a lot of equipment. So, I am not really able to help out like I used to. So, we are living pretty much now off the cash rent, which is a little bit tricky. We are renting it [their farmland] to our son for just a cash, a crop share. So, that goes up and down with the markets too. I am a little nervous, because it is the first time, we have ever had to rely on the crop share alone, renting. The grain prices are going down every day and we are just waiting for the market to improve a little bit so that we can sell some of the grain we have. It is just not much net income to work with anymore. My son has got his hands full with the interest in rent and debt (31M).

Being close to the retirement age and experiencing health problems prevented this participant from being able to physically operate the land.

8.4 The Benefits of Diversifying into Wind Farm

Adopting wind farm diversification has many perceived benefits to farmers and

local communities both economically and environmentally. Participants reported that they receive enormous benefits to adopting wind farm diversification. For instance, it allows them to improve the livelihood of their families and to secure financial resources that will help them to remain in farming. Adopting wind farm also generates funds in the form of tax revenues for the communities they are located in. Some also noted that wind farm companies support the local community by providing them with community resources such as playgrounds for children.

8.4.1 Wind Farm Benefits to the Producer

Adoption of wind farm diversification has helped participants to recover from the ongoing economic changes that have affected them in the last five years or so. "Having wind farm helps to increase our financial resources and keep our farm going. There is no question about that, especially as the farmers are struggling to survive (32M). Additionally, adoption of wind farm diversification has helped some participants to adopt technology and remain competitive in the current globalized agricultural market. These participants stated that wind farm and other new technologies are the future of farming, because conventional farming practices are unable to compete in globalized agriculture.

> To actually make a living on farm business, you got to have the pencil pretty sharp. Wind farm diversification helps to buy technology. I think I am all for the new technology, because that is what we are going to have to do feed the world. It is to keep up, otherwise it is going to be starvation (35M).

Besides, as participants asserted, wind farming is a decent investment in which farmers do not put a lot of efforts into and it provides them with good income. "Wind farm is a good investment, you don't put nothing in it, and you get money that will help you for years or decades" (14M). Thus, participants who are leaning towards the retirement age

stated that it makes it easier to manage their operations with little labor, especially as the need for labor in the agricultural sector is growing.

Moreover, while there is no scientific evidence to support the claim, one participant believes that adopting wind farm diversification has improved his crop yields in his farm field. He has found this especially true for crops that are planted underneath or nearby the wind turbines which have yielded better. Thus, besides the direct financial benefits of wind farm, he believes that it improves crop production.

> As far as yield, it has even increased our yield. Crops that we planted underneath of wind towers last season seemed to yield better. There is also one farmer in northern Minnesota who said that his corn yielded better when they were in the areas of these wind towers. Although I can't confirm that right now, but the time will tell as the time goes (32M).

Although this participant asserted that there is currently no evidence to confirm or support such claim, farmers like him are optimistic that time will prove them right.

Additionally, participants stated that adopting wind farm diversification helps them to bring the young generations back to the farm. They indicated that as the ongoing economic changes (especially globalization of agricultural markets) have made it extremely challenging to increase or maintain their profit, many of their children as not planning to return to the farm after college. They argued that while some young members of farm families are not interested in farming or to take over the land after their parents retire, those who are planning to stay on the farm and continue their family legacy and history are unable to financially support their own families.

> It would help, like our daughter is the person that would probably come back to the farm than our son. Because he is married, and he wouldn't want to come and take care of the farm. Eventually, I hope somebody comes back and utilizes the farm and could do some farming. Right now, it is like the farms got to get big to keep your children there, and farmers got to find ways to diversify so that they

> can have the young generations come back after college. For us, this wind farm would be another diversification to help bring somebody back, or even adding a pig barn, fish farm, or whatever. Farming is changing (35M).

As the young generations of the farm family get married and have their own families, farmers need to ensure that the business can potentially support more than one or two families. As the following participant adds, one way to retain young generations on the farm is by expanding the land and diversifying further. However, while the imbalance between input costs and revenues is increasingly challenging, the chances to expand the land are shrinking because of the constant increase in land prices as a result of the competition between farmers to expand their lands.

> Right now, that would be a tough deal for a young person to get into farming if they didn't have a farm already to take over. If you had a farm and had some diversification on it like that wind farm, you could see into the future. You could expand but you would have to pencil that out very carefully. Even if the young generation comes back to the farm, they got to be thinking beyond the box to survive. I don't think land prices are going to go down too much because there are people with a lot of money that just invest in something just to have for hunting or whatever purposes (33M).

Producers who adopted wind farm diversification believe that incorporating wind farming will help them generate further income to financially support their own and their children's families, if they decide to stay on farm. It might also help participants to attract some of their children who left the farm to return to the farm and take over the land after they retire.

Participants who signed up for the wind farm but did not get it expressed disappointment for being unable to achieve their dream of diversifying into wind farming. They argued that wind farming would be a substantial addition to their financial resources, because it takes less amount of land to produce compared to commodity crops.

> The wind farm would have helped in the farming operation. It was an additional source of revenues from our ground that we own. Yeah, wind farming takes less space and generates more money than growing crops on the same amount of land. The amount of money we would have got per acre from the wind was tremendous. There isn't anything compared to wind farm. I mean there isn't a commodity crop that can pay as good as wind farm. And we happen to be in a great wind plain, our state is windier than many other states, which is a good source of income if we can turn it into money (37F).

However, as the local grassroots opposition against wind farming became intensified recently in some counties, participants stated that they are not optimistic that there will be a solution to this problem in the near future. This is particularly true in counties where wind farm opponents were able to force the wind farm company and the authorities such as the county public utility commissioner to turn down the wind farm projects. Some of them asserted that they are concerned that they might never be able to adopt wind farm diversification.

Adopting wind farm diversification might provide indirect benefits to farmers who lease (the land they operate) from other farmers who have diversified into wind farming. In these instances, the tenant might pay low prices for the land they are renting because the landowner receives adequate money from the wind farm company, which allows him/her to charge the tenant less than the market value.

> Some people that I rent from that they got one particular case. There are four towers on this 310-acre parcel of land. They have 4 towers, and so they are getting income from that. And so, then the landowners are very gracious to me. They do not charge me as much for renting their farmland, because they are getting money from the wind towers. They could charge more than they are probably under the high market value if they wanted to, they could rent it to somebody else and charge a lot more. They could charge more but they just say, 'we are getting money from the wind farm.' So, that is kind of a secondary benefit that comes to me because of the developed wind farms (34M).

Although the land prices (both for buying and renting) are increasing, the above tenant indicated that his landowners charge him less because they receive adequate financial resources from the wind farm that help them with input costs and living expenses.

To make sure that he is not charged less because of his relation to the landowners, I asked him whether he believes the landowners are potentially charging him less not because they are receiving funds from the wind farm company but because of the social connections between him and the landowners. He emphasized that the landowners are doing so because the money that they get from wind farm helps them meet all their family and farm needs, which allows them not to charge the tenant based on the market value.

8.4.2 Wind Farm Benefits to the Local Community

The perceived benefits of adopting wind farm diversification extend beyond landowners who lease their farmlands to wind farm companies. Participants stated that a large portion of wind farm tax revenues are given back to local communities where the wind farm projects are developed.

8.4.2.1 Wind Farms Support Local Communities

According to participants, wind farms generate revenues that help the local community to improve educational services. Local communities where wind farms are developed receive financial support in form of tax revenues from wind projects. Interviewees indicated that the county school districts receive wind tax revenues to provide better education and services.

> It is about, the least, invasive of industries you could get for the dollars return that the county and the schools get. They get large numbers. And it seems like the only way we can fund anything in the countryside is real

> estate or sales tax and that hits farmers right between the eyes. That is a lot of money that it just takes out of our pocket. (31M).

Substantial amount of wind farm tax revenues are given back to the local communities. "Because they are taxed quite highly, because they are expensive and costs are divided along the way, you get your property tax off them and, so the school district gets quite of them" (32M). Participants also argued that not only the local community is going to benefit from wind farm, but being a renewable energy source, wind farm also improves the environment. Therefore, the country as a whole is expected to benefit from wind farm projects in the ongoing national efforts to provide more clean energy. According to participants, wind farms are expected to supply clean electricity to different parts of the US.

8.4.2.2 Wind Farms Improve the Local Economy

According to the interviewees, adoption of wind farm diversification enhances the local economy. They argued that besides supporting local schools, wind farm companies also help to improve local businesses. During the wind farm construction, there is often an influx of hired construction workers and the wind farm employees into the local community. These individuals spend money in the local community by purchasing food and other items from local stores, which temporarily improves local businesses.

> The towers that went up ten years ago and when they brought the crews and the team in to work on and put it up, it helped the community, because there is more people eating at the cafe' and more people getting gas. They were also having their tires changed. I actually had lunch with three workers while they were here, and other people did the same thing. So, I mean it did help the community a little more by buying things and helping businesses, it helped the community when the towers were being put up (33M).

Throughout the construction of wind farms, the local businesses are expected to

experience a slight increase in their sales.

Besides, some wind companies hire people from the local community to help construct the wind towers, which improves the local economy and reduces the employment rate. Although some locally hired wind farm construction workers are hired on a temporary basis, others who obtain decent skills as a result of working with wind industries might continue working for wind companies. They might move with the wind companies and work in other counties and states.

> They [the wind company] did hire local people to work on the towers. They hired three gentlemen to work on the towers and two of them live within 25 miles of the towers. So, they hired locally also to work on once they were put up, there is a benefit too (33M).

8.4.2.3 Wind Farms Improve Local Infrastructure

In addition to hiring local workers, wind farm projects improve local infrastructure. Some participants described that before wind farm companies come in, some county and township roads were poorly constructed or lacked maintenance. However, after wind farm companies started developing wind turbines, they built roads to bring in heavy equipment and repaired some of the roads that were torn up. "In fact, they improved some of the roads and our overall infrastructure. They made the roads better because of the heavy equipment they had to bring in wind turbines. We have better roads now in this area because of these wind projects" (32M). In other words, to bring in heavy equipment, wind farm companies need to have decent roads.

Moreover, there are cases in which the wind construction companies support local communities by building playgrounds in the neighborhoods and giving away donations and incentives to the community. The following participant describes the relationship

between their community and the wind farm companies and workers as strong and goes beyond their connections with other corporate investors in the county.

> The construction companies do sizable donations to the community just to do what they wanted to do with them. If they want to do something for the school benefits or whatever they want to do and most of these systems did when putting a bunch of playground equipment or so (34M).

8.4.2.4 Wind Farms Help Train Youth in Local Communities

In one county, the local community has purchased a wind turbine and established vocational training classes in collaboration with wind farm companies to train and teach members of the local community who are interested in working with wind farm companies in the future. Especially, these vocational training classes focus on teaching the youth in these communities and providing them with skills and hands-on experience that they need in order to work in the wind farm industry. As the following participant states, one of the wind turbines was owned by the local community which was used to train the youth who are interested in pursuing careers in the wind industry.

> The wind farm that was put up ten years ago, there is a vocational school for college students. Actually, the school bought one of wind towers and put it up. And they set up classes, they teach students how to work on the wind farm. There is a class, and so they have people going into as the profession to work on the wind towers, and those people do stay locally too. They can then work on the wind farms that are going up. So, there was a good example of being owned [by the community] other than by the wind turbine company. This one is owned by the vocational school so they can work on whenever they need to. They have classes out to the wind tower site, and hands-on learning that way (35M).

Not only are these individuals trained to provide services to the wind companies, but to remain locally after the end of wind farm construction and contribute to their communities by training other individuals and transferring the knowledge and skills that they gain.

8.5 Using Wind Farm Tax Revenues as Incentive to Convince the Opponents

As indicated previously, local communities receive tax revenues for the wind farms. According to participants, in some South Dakota counties where wind farms have been developed in the last ten years, communities have benefited from wind farm projects by having some of the wind farm tax revenues directed to local communities. However, recently, the state has legislated to centralize the distribution of wind farm tax revenues by giving them to all counties or school districts across the state. They are disappointed that by the beginning of the 6th year of wind farm project, the state will begin withdrawing some of that tax revenue and distributing it to school districts in other counties across the state.

According to the Center for Rural Affairs, for the first five years, wind farm tax revenues will remain in the districts or communities where wind farms are located, then once the wind project enters it is 6th year, the state will begin withdrawing these funds. Some participants disapprove of this plan, arguing that wind farm tax revenues need to stay locally in districts where wind projects are developed.

> Some point I want to address too is the tax situation for the wind towers. I am on our local school board and the wind towers have been very beneficial to our local district where the wind towers are located until three years ago when our governor and legislators at that time changed the tax formula so that the money from the wind towers do not stay locally. Now it goes to the state and is divided to everybody and some of it comes back to us, but most of it goes to everybody in the state (34M).

Another participant described that "originally when you put them [wind turbines] up, the county gets the entire revenues off the tax system, and it is quite helpful to the school system" (32M). The statements of these participants signify the importance to them of having the wind revenues localized.

One participant asserted that they have stood up against the new policy that centralizes wind farm revenues at the state level. He stated that they are planning to work with their legislators and inform them about the importance of having these tax revenues remain in their communities.

> We used to get that money from Crocker Wind Farm for like nine years, the money used to come into the school system, and that is politics again. We got to work with our politicians to get that [money] back to our town. It does not only profit us, but it profits others as well. A lot of people don't see that money coming into the county (36M).

These participants indicated that many school districts in their communities are experiencing significant financial challenges and the wind tax revenues have been substantially helping their school district for the land nine years to provide better education and services. But because the wind farm revenues have recently been distributed to all districts across the state, their schools are struggling to maintain better quality of education and services. Participants argue that wind farm diversification is a local decision, thus landowners should be able to direct the use of the wind farm tax revenues by having them given to their local communities.

> When we signed up as landowners, one of the strong selling points was allowing wind farm projects to come in is going to help your local school district, and it did for the last 10 years it has helped. We are hoping that there could be a change in that because, like I mentioned, there is negative parts about it. And it is a local decision if I want to sign up my land, that should then help the local community as well. I understand that should help the state as well, but some of that money should stay locally. So, to me, that is a real frustration (36M).

Although participants acknowledge that wind farm tax revenues should benefit the state as well, they, however, believe that the priority is for local communities. Also, despite the fact that the state is not withdrawing such funds yet (it is expected to withdraw these tax revenues in five years), the interviewees argued that they are concerned about the future

of their communities. “They are taking away twenty percent of it every year for five years. So, in five years, we will not have that.” (35F). Their concern is that the money will be withdrawn entirely from the local community by the end of the indicated deadline.

Participants also stated that it is disappointing that their wind tax money is distributed to counties that do not have wind farms because either the wind farm has not approached those places or the grassroots opposition movement such as that in Lincoln County has forced wind farm companies not to build wind projects in their counties or districts. These interviewees indicated that they are hopeful that their state representatives will work it out. “Our school superintendent did a lot of work this year at the state level trying to educate people what has happened and how it affected our district and our governor was not aware that that was the case till the summer. So, we are hopeful that they can resolve it” (39M). Otherwise, if the wind farm tax revenues are not returned to the local districts, farmers who are planning to diversify into wind farming in the future might face opposition and there will be no incentives to use to convince wind farm opponents.

> I really think it will hinder the efforts of having people signing up. It took away that incentive from people in the community. In the past, when I would talk to people who were frustrated about wind towers, they didn't like them. And I would say, do you know how much it is helping the school district. Then, they will say like, “oh, I have kids and grandkids those go to the school” [school in the same district]. I am supportive for the school, and it was that our local district was getting almost a half a million dollars in wind tower money and our budget is less than $3 million.” So, that is a big portion of the budget that was coming which now they are slowly taking it away piece by piece (35M).

Some wind farm landowners are trying to communicate with their legislators and explain

to them that although they do not expect that all wind farm revenues should be directed to the local community, but at least, some of the money needs to be used for the benefit of the local districts.

Some interviewees asserted that the wind farm tax revenues have helped them in the previous years to convince some members of the local community who opposed wind projects.

> We are trying to educate them, and we are hopeful that there will be a compromise in there somewhere that they took away everything and understand that we probably don't need that much but we would like to have a part of that to stay local. And the incentive to help us encourage people to diversify more into wind farm and to silence those who were opposing the wind project in the first place. They might come and say, well, you know, where is the money that you promised us that it was going to help out school district (39M).

In other words, wind farm landowners used the argument that wind farm supports local schools as a tool to convince wind opponents. However, since the state has started taking away that money, participants believe that farmers will face challenges to silence the opposing groups in the future so that they can adopt wind farm diversification.

8.6 The Challenges Associated with Adopting Wind Farm Diversification

Most of challenges associated with wind farm diversification that participants described included that construction of wind turbines could cause land degradation or soil erosion, especially during the first few years of wind farm development. During this time period, wind farm companies use heavy tractors to create roads and bring in the equipment and tools to build wind turbines. This situation caused some sort of discomfort to some participants. Typically wind companies may reimburse farmers for the loss of their crops, but not the damage caused to the land and the soil. One interviewee believes

that signing a contract gives wind farm companies the right to use the land to construct roads that they need to use in building the towers.

> The very first year when they put them up, they destroyed a little bit of ground getting everything established but they reimburse us for the crops that destroyed. Just during initial process, there is quite many people in the area that do the corn testing in the ground and when they were putting the towers up, there was quite a bit more activity around (33M).

Another participant expressed his frustration about the land degradation, especially the fact that his land was wet when the wind company began building the turbines. He asserted that the wind construction equipment went extremely deep into the ground causing not only land degradation but also some economic loss to the extent that the negative impact of the construction remains visible on his farmland until today.

> Probably one of the negative aspects was during construction. There was more traffic in the area there was a heavy construction equipment cranes and dozers, and the fall of the year that they started construction was extremely wet fall. So, when they were building the towers, the compaction went extremely deep because it was really wet, so that was an economic hardship that we still see the negative effects from that. The land right around the tower doesn't produce crops the way it should do. And that is partially because of the compaction. That was multiplied many times because it was so wet (34M).

Another couple of participants also expressed their concerns that the roads that wind farm companies created on their farmlands will remain for as long as the wind turbines are on the land, as wind companies will be using them for maintenance of the turbines.

Although some participants stated wind companies restore some of the damage in the field such as the areas that are eroded by having the grass regrow, others indicated that most of the impact will remain for several years. The fact that some roads or driveways that the wind companies created are much wider than the regular roads and might not be reduced to the normal size also causes some concern to the landowners.

> The driveways that they have made really wide so that they can get the towers in and they have made them large, hopefully they will narrow those up. Like the clay that they use to build the driveways, there will be 20 loads that they haul back out of them. Big long, hundred-foot driveways, they didn't make them back smaller (35M).

A few participants asserted that the construction issues that some landowners have experienced as a result of diversifying into wind farm are less concerning to them, but instead, that they are most concerned about the possibility that as the wind turbines get older, the installed gears perform ineffectively, thus cause oil leakages onto the ground. According to these participants, this will create an environmental issue for their farmland in the future. Some interviewees indicated that when visiting or driving by wind farm fields (on other farmers' operations) that were adopted some years ago, they observed excessive oil leakages that come out from the wind turbine gears onto the ground. In other words, some wind turbines that are a few years old have started leaking oil which causes concerns to some participants who are currently in the process of adopting wind farm diversification. For instance, this participant expresses his concern that some wind turbines in the area that were developed recently are excessively leaking oil.

> From what I have seen in the wind farms that are north of us and that have been going now for I don't know how many years. I don't see how they are going to last 30 years. A lot of them are getting tough already. They all leak oil and they are all black. There was some bearing and seal that went out of all of them, and they are all black. Anytime you drive up there, you can look across them, and there will be a few that aren't running. They must be working on, I don't know (36M).

Moreover, some participants asserted that wind turbines disrupt their efforts to harvest and plant around them, in that they create additional obstacles for farmers to move around when planting or harvesting. Some interviewees indicated that having their farmland degraded is a significant challenge to them, but they appreciate the financial

benefits of wind farm that they receive as a result of leasing their farmland to wind farm companies.

8.7 Community Reaction to Wind Farm Diversification

Participants were asked whether the community including their neighbors, families, relatives, and fellow farmers have reacted to their adoption of wind farm as form of on-farm diversification, specifically how the community perceived their role as farmers after adopting wind farm diversification. While most interviewees indicated that they experienced community reaction, they, however, encountered no significant reaction from their family members. “No, no, and my dad too, when he gets an income from wind towers, he said many times that he is thankful to have that other revenue source that when the farm economy is down” (34M). Also, whereas the reaction towards the role of wind farm diversifiers was significant in some counties, it was less in other places.

8.7.1 Neighbors Always Make Comments

Some participants perceive the community reaction to wind farm diversification as a normal response to change or innovation. According to them, in the farm community, every new idea that is introduced gets opposed by some of their neighbors. Therefore, they believe that community reaction does not impact their adoption of wind farm and other nonconventional practices. Some participants indicated that their neighbors frequently make comments about their adoption of wind farm diversification. “There is always comments, people always make comments. All people say you are just going to get rich now off in that wind towers, that is what they say. You hear comments that you are going to get all that money from the wind farms” (37M&F). According to them, one of the comments wind farm opponents make is that farmers who diversify into

wind farm are going to become rich, which they believe is not true.

In fact, participants indicated that most of money that they receive from wind farming is used to improve farming activities and to sustain the business. The following participant argues that nearly all farmers who diversified into wind farm will use that money to support farming activities.

> Nine out of ten people will use that money to support the farm. The reason we do wind business is to help us continue farming. Because the crop prices do not seem to help us stay in farm in the future. It will help me because having $30,000 a year, you might not have to go borrow money from the bank to buy seed or fertilizer or something. You will have $30,000 to put back in, which will help you be more successful. So, I should say, in the long run, maybe it will help you, I don't want to say rich, but it will help you. If you are in a spot where you could take the $30,000 every year and not have to use it. Just put it in the bank, when you retire, you have that money, that it would be a wonderful thing, and most people are not in that kind of shape to do (36M).

According to the above participant, receiving $10,000 net income annually from each wind turbine will help farmers not only secure financial resources for their operations, but, for some, also secure retirement funds for those who are close to the retirement age or who can afford to put the money into retirement. Particularly, it is important to note that some participants who have diversified into wind farming are either in the retirement age or close to it. Therefore, as stated previously, adopting wind farming is significantly important to these participants. The youngest participant who adopted wind farming in this convenience sample was in his late 40s, others are all aged from late 50s to late 80s.

Other interviewees described neighbors who make comments that wind farm landowners are becoming rich as jealous. They are either those whose land did not meet the selection criteria (that is set by the wind farm companies) to join the wind farming business or those who do not physically live in the area.

> The only thing you ever hear is comments that, “Oh, you are going to get all that money from the wind farms.” That is the only comment you ever hear from anybody that doesn't have them or lives in town or whatever. Some people do not like wind towers because they didn't have the opportunity to have them. If they had an opportunity, they would have taken one in their property. But since they didn’t get one, then they do not like them. It is just some sort of jealousy or something like that (33M).

Some participants believe that some of their neighbors who oppose wind farms do not live in the area. They live in town and own small lands in rural areas where they oppose the development of wind farms. “I heard that out of 60 people who were against it [wind farm], 45 of them did not actually live on the farmland. So, that gives you some idea, mostly people probably who aren't involved. And of course, there is always jealousy” (31M). Although some participants described their neighbors who oppose wind farm as jealous, others indicated these individuals are also misinformed.

> I think there are people on the sidelines that probably are misinformed, and they think, oh, these guys are up, you are going to get all that money because they have wind towers on their land, and then they are almost going to be half jealous. I guess they are going to have to look at them the way they want to look at it. But there was also a community fund that they are going to put money into, that is going to help the community, which is a lot of money every year. So, it is going to benefit everyone, everyone will be better. Our roads will be better. But there is always jealousy. Well, there is that jealousy even from big farmers against other big farmers. He is got that big track here, I got to have a big track. Well, if they [wind farm opponents] want to look at it that way, then that is up to them. I am just looking to help the community (35M).

These participants indicated that wind farm opponents are not aware that the money that is generated from wind farms is used to improve the farm operation. It also helps to improve the education and services in the local community through the tax revenues that are generated from wind projects.

Some participants perceive adoption of wind farm diversification on their farmland as individual property rights. They argue that landowners have a right to use their land for whatever benefits them and their families, or any decision they are willing to make. According to these participants, farmers who adopt wind farm diversification follow the government ordinances. They assert that they believe in laws that protect individual property rights. Therefore, neighbors ought to avoid intervening in their decisions to use their lands. "But when you have ordinances in your county that says, okay, if I meet these ordinances, I should be able to put up whatever I want to put up, I don't care if it is a wind farm, hog farm or whatever" (31M).

Another participant expressed deep frustration about the reaction of neighbors, claiming his rights to use his land how he pleases and describing the opposition as politics. He argues that people in the neighborhoods who oppose wind farm projects have their own views.

> It turns out to be an issue of land right, it is an issue of land. It isn't really the issue of that wind farm being there. I should be able to put up a poll, 70 storages I would have built if I wanted to make a hawk house. I don't care as long as it meets ordinances of your county. I am not interfering with your health or anything like that, I should be able to do that. So, you get politics and that. I think the way people react about new changes makes it harder to do whatever is in your mind. The land is ours and we should be free to decide what to do with it. I guess everybody is got different ideas. Like I said before, the forefathers came with land ordinances, and if you want to change them, there is a practice, there is a way of changing an ordinance, there is public meetings and all that (35M).

Because of the community reaction, it has become hard for some farmers, like the above one, to adopt nonconventional practices to increase their income and profit and sustain their farms.

The following participant adds that neighbors have the right to express their feelings. “I guess if they do not demonstrate but band together and share their feelings, that is okay. I still go back to the private property rights that we should have” (31M). However, he believes that adoption of wind farm diversification is the individual’s property right. Thus, from his viewpoint, wind farm opponents have no legitimate reason to react.

8.8 Reasons Neighbors React to Wind Farm Diversification

In terms of the reasons some neighbors of the participants oppose wind farm diversification, interviewees indicated that neighbors have their own opinions. According to them, some community members are concerned that wind turbines affect wildlife habitat, the environment, and the community. For instance, wind farm opponents argue that wind turbines cause noise, kill birds, and disrupt the wildlife.

> There are certain types of people who claim that they hear the sounds and are concerned about the environment, but I don't know. That is kind of their own opinion you might say. You know, we live close to them right on our land and I have no problem with it. As I said, we have one just right in front of our house and we hardly hear anything. No, no I can't see anything that's harming it.

Most participants described claims of wind farm opponents as baseless. Another participant indicated that some wind farm opponents even claim that wind turbines cause cancer and produce shadow flickers that bother them, especially those live nearby the farmland where wind turbines are developed.

> Some people do not like looking at them, they can think of all kind of things that are wrong with them there. Some of them say that they are noisy. They say, you get some light flickers with them. Some people even say that wind towers cause cancer and everything else you know. I think that is why they will be looking at you differently (14M).

Moreover, some participants believe that wind farm opponents do not only react to wind

turbines, they argue that their neighbors who oppose wind projects are jealous about the money that they generate from wind farm projects, thus they look at them differently.

Despite the complaints and comments that wind farm opponents make publicly regarding the adoption of wind farm diversification, many participants stated that they have not been confronted or directly approached by any of their neighbors who oppose wind farms. They often learn from other neighbors that certain people in their neighborhoods have raised concerns about the participant's adoption of wind farming. "We haven't had any experience with that yet, but as I said, I hear from neighbors that some people have complained about them, but no one came to me directly and asked me or complained" (31M).

In other words, to express their complaints against wind farming, wind farm opponents often talk to friends and relatives of the farmers who diversified into wind farming about their concerns regarding certain neighbors bringing in wind projects to their neighborhoods. For instance, the following participant stated that one of the wind farm opponents had asked his relative to inform him not to lease his land to a wind company. The participant indicated that that neighbor is one of the farmers whose land was not qualified for the wind farm.

> The one gentleman, for example, who did not like towers going up north [on the participant's land]. He talked to my niece and asked her to tell me not to put wind towers in. And he was one of the guys didn't get one, his land didn't qualify. So, he didn't want anybody else to have wind towers, but he would never talk to me about it. He was trying to convince her [his niece] to convince me not to put wind towers in, but he would never come to me (33M).

Because of the social ties and living in a small community, the above participant indicated that it is easy for neighbors to disseminate information to the intended

landowner. He asserted, people in their neighborhood are comfortable expressing their concerns but oftentimes through another person instead of bringing up the complaint and directly talking to the landowner.

Another participant reported that his neighbor who signed up for a wind farm that is currently under construction complains that he is uncomfortable with his decision to sign up for it. “There is one guy who also signed up, but he tells me that we shouldn't ever take these dumb things [wind turbines]” (37M). The participant asserts that this neighbor wants to financially improve his farm but does not accept the landscape change or the farmland being used to create roads onto the places where wind turbines are expected to be installed.

Additionally, as reported by another participant, his neighbor did not want to sign up for the wind farm because he lives and works in a big city where he holds a prestigious job and he and his family spend most of their time in city. They only visit the farm during the weekends and vacations to enjoy the natural scene and beauty in the rural area. Because this neighbor did not sign up, some farmers in his neighborhood could not get wind turbines and those who got also did not get all wind turbines that they had signed up for.

> Well, there was one guy. Actually, we would have had five towers if he would have signed up, then he didn't sign up. So, then that neighbor made it so hard for us to have more towers. It changed things for everybody around him and how they placed the towers, because he wouldn't take any. So, they are not going to put some here and they can't keep going on. You know how they do it. We couldn't put them on there, so, then they got moved. And one guy got more towers in and then we got less (36M).

The refusal of this neighbor to sign up has impacted farmers in the neighborhood because the wind farm company could not pass a power line through his land onto the lands of

other farmers who signed up and wanted to diversify into wind farming. The participant stated that although the neighbor who opposed the wind farm did not necessarily want to prevent his neighbors from adopting wind farming, but by refusing to sign up for wind farming, he has made it harder for some farmers in his neighborhood to have wind turbines on their farmlands.

While some participants conceive their neighbors, who oppose wind farming, as having their own opinions toward it, one participant believes these individuals (wind farm opponents) might have a valid argument. "I know there is a lot of controversy with them [wind farms] and maybe the people that are opposed to them have some valid points I don't know" (34M). Furthermore, one participant who herself opposes wind farm diversification argued that adopting wind farming would affect her values as a farmer. "My values are about conservation, not about capitalism. That would be for capitalistic endeavors. I am fine with that [not having a wind farm]. I am going to be just fine without that $40,000 a year" (23F). She perceives that adopting wind farming means supporting capitalism. According to her, the main factor that motivates farmers to adopt wind farm diversification is accumulation of wealth and being less concerned about the land and environmental conservation. She claims that wind turbines pollute the land and the soil (leaking oil) and disrupt wildlife habitat.

Participants (wind farm diversifiers) have used different strategies to respond to community reaction toward wind farms. While some stated that they ignored the reaction of their neighbors (wind farm opponents) because they consider it jealousy and personal viewpoints, others indicated that they listened to them and tried to educate them that wind farming does not make the farmer wealthy, nor does it affect the environment. Instead, it

provides benefits not only to farmers who diversify into wind farm to sustain their farms, but also to the local community.

8.9 The Impact of Wind Farm Diversification on the Existing Relationships between Farmers

Participants asserted that social connections between them and their neighbors play a significant role in their success as agricultural producers. They value their relationships with their neighbors and other members of their community. Specifically, participants indicated that during the difficult times, they depend on the existing ties and relationships between them and their neighbors, which makes farming dissimilar to other enterprises. Some participants even described these connections as part of their identity as farmers. They use their social connections to disseminate information about new practices or innovative ideas and to access training opportunities. Thus, according to them, disruption of social connections between them and their neighbors affects the benefits drawn from information sharing and collaboration with one another.

Due to the increasing tensions between some participants who have adopted wind farm diversification and those in their neighborhoods who opposed it, the existing relationships between these groups have been affected. According to some participants, they and their families collaborate with their neighbors and help each other during the times when they need help with their operations. “If you are stuck, you call the neighbor, and he calls you out. If my tractor has broken down, I will call the neighbor. ’Can I borrow yours for an hour to finish feeding cows?’ And he will say, sure, come and get it. That is just the way it is, it is good” (35M). Some participants expressed concerns that the existing social connections between them as farmers are threatened as more farmers in

their neighborhood express opposition to wind farm diversification, which leads to divisions between those who support wind farm and others who oppose it.

Participants are concerned about the weakening of relationships and ties between neighbors. Specially, some wind farm opponents are relatives to wind farm diversifiers or people who they grew up with and attended school and/or church together. As the following participant states, despite the failure of previous attempts to reconnect with neighbors who opposed wind farming and stopped communicating with them, they are still peaceful and willing to reach them out.

> Well, when you think about it, there is definitely people who you grew up going to church with who had a different standpoint. What I want to say is that we were still willing to be respectful toward our neighbors. It is not like we would have put a wind turbine right next to their land. I talk to some, I say hi to them, but some still would not talk to us. Yeah, I saw them hide away all the time, they are a different type of character. So, I think there is been a mix of people that would not talk to us, but most of them would, because we have been in the community forever. It makes me sound bad, but I feel like we tried. Personally, we tried to still be polite to people, because they are still our neighbors. I will not say that that was syndicated towards us. But there are people, like when you look at some people who we used to go to church with, they weren't happy with our parents that we were involved in wind farm. They called and talked to our parents (37F).

Although some proposed wind farm projects were turned down in the county of the above interviewee and there is no possibility in the future that there will be wind farm development in their area or neighborhood, tensions between wind farm diversifiers and opponents remain strong years after the wind farm was proposed in their area.

Similarly, other participants expressed frustration that the relationships between them and their neighbors continue to breakdown despite their attempts to resolve the tensions. Often, neighbors are not willing to talk to wind farm diversifiers. Even if they

tried to approach them, not a lot of the wind farm opponents are ready to reconcile. As the following participant states, the two groups do not approach each other in the neighborhood or public places to avoid further escalation. “I suppose not severely, but it [the relationship] has been a little bit disconnected. Neighbors are not drawn to each other, you rather go this way, so we kind of avoid [approaching one another]” (39M). According to some participants, the opposition groups have escalated the situation to the extent that neighbors no longer greet each other. This situation has weakened the social connections between wind farm supporters and opponents.

Another participant described his frustration about the tensions and lack of contact between neighbors in their county. He indicated that wind farm opponents went beyond simply opposing the wind development and argued that they (the opposition group) have politicized the issue and escalated the tensions. Thus, he believes that there a little chance that these tensions can be resolved.

> I think the opposition, they have already put us in a bad position, our relationships with them are broken. Like I said I feel bad about it because I really value my friendships with people around me. I mean some of them that are against the wind project, some are for it. But it is not just an opinion, they are very opinionated, I mean it is very strong. That would be the only thing that makes me feel bad, it is really bad. But that has already happened, we already voiced our opinion for the wind towers. So, we have already got that stigma with the people who are against it. So, that is already formed. Now, whether we get a tower or not, that is beside the point, I think (31M).

However, there are different levels of tensions between these indicated groups. Some participants stated that in some places that the social connections have been significantly affected, while some wind farm diversifiers are still able to communicate with their neighbors. “We are still civil, but we don't bring up the wind farms because we know

how they feel" (39M). But, in their social and public gatherings, they do not discuss any issues that are related to wind farming so that they do not hurt the feelings of those who oppose it.

In terms of how participants (in places where the difference grew because of the wind farm opposition) perceive the future of their communities as tensions continue escalating, they indicated that they do not know what will bring their communities together again. Some of them are hoping that time will heal the affected relationships. "I don't know, the old saying that time heals all wounds. But I don't know, I can't see it getting better. You know, the way everybody is kind of draw it up, but I hope it does, time probably will" (31M). Others are pessimistic that nothing will resolve these tensions, because the community is significantly divided to the degree that people can't get back together after years, even in places where wind development projects were turned down by the opposition groups.

8.10 The Impact of Wind Farm on Farmers' Identity and the Farmland

In this case study, participants were asked whether their adoption of wind farm diversification (as form of on-farm diversification) has impacted their identity as farmers including their role and farming legacy and history. Also, they were asked whether they believe that their feelings about the landscape and their relationship with farmland have been impacted. They were also asked whether wind farm diversification affected their overall operations. For instance, the interview questions highlighted different aspects of farming such as how farmers view themselves and their role as farmers and the way they practice their daily activities after adopting wind farming, as well as the meaning they assign to these practices. The questions also addressed how the community (including

neighbors, fellow farmers, relatives) reacted to the role of wind farm diversifiers.

8.10.1 The Impact of Wind Farm Diversification on the Role of Farmers

Participants expressed different views about the impact of wind farm diversification on their role as farmers. In other words, not all participants who adopted wind farm diversification perceive their traditional role similarly, thus the impact of wind farming varies based on the personal views of participants about their roles. Although some interviewees indicated that diversification into wind farm has affected their role as farmers, others stated that they perceive less or no impact because of adoption. Most participants, however, asserted that they perceive wind farm diversification did not cause significant impacts on their traditional role as farmers.

> As far as my role, I am still a traditional farmer, just have new extra income. Having wind turbines on your land does not make you become rich. Because the company pays you a fixed amount of money every year. It is not that the wind towers are yours and you make investment out of them. It is just some extra money that helps us out to better manage our farmland and pay for the expenses of our family, especially I am a retired farmer and do not have ability to work on farm with the family. Another thing is that the money we get might help us improve the equipment a little bit by buying new equipment and fixing the broken ones (39M).

The above participant stated that his role would not change because he is still the landowner. He is only leasing his land to the wind farm company and receives certain amount of annual payments that helps him improve his operations.

Also, as the following participant (who signed up for a wind farm but did not get it because of the local opposition to it) states, although his role might have been slightly affected, his overall identity as a farmer would remain the same. He would still identify himself as a farmer rather than an entrepreneur.

> I guess I wouldn't consider myself being an entrepreneur if I had a couple of wind towers on my land. No, I would still consider myself a farmer. And I don't think I would look at my role a whole lot differently, maybe just slightly different but pretty much the same. People would probably look at me differently, if you asked. There is just so many people, they just don't want to look at them. I think some of my neighbors would think I am doing this just for the money and no regard to the environment, and I don't think that is true. But I think that is the way some people would look at you, that is what they would think. They would say you are just putting up the wind towers because you can get $20,000 or whatever how much you are going to get a year (14M).

As this participant described, although the community members might view his role differently, he is confident that his identity as a farmer remains the same.

While the community might look at the new role of the wind farmer differently, one participant indicated that they and their families perceive no difference. “My wife and I just don't see the disadvantages of having these wind towers. I went to some meetings and I learned a little bit, but it would be, just like I am going to put up a haunted building or something, it is just a different aspect of farming, so to speak” (31M). They consider wind farm as equivalent to any other form of farming activity.

In fact, some interviewees asserted that every farmer gets extra money by either working off the farm or making investments in the market.

> As far as I am concerned, so far it hasn't changed any means or way of farming, not a bit. Everybody gets extra money. It does not change anything; I am still a retired farmer. It is just making some extra money, I am not a businessperson, I am a farmer. If someone comes and gives you extra money, 4500 bucks a year, wouldn't you take it? I bet you will (32M).

Again, most participants believe that adopting wind farming is like any farming activities such as raising crops and livestock or leasing out a farmland or equipment to other farmers. “Having wind farm is no different than raising a crop, it is what it amounts to.

The only thing [different] is just the feeling of having them up here for the rest of my life" (36M).

The following participant argued that having a wind farm is no different than owning equipment and leasing it to other farmers and getting paid, which, according to them, is also different than planting, harvesting, or raising livestock.

> Personally, in my opinion, I still consider it as farming. From our perspective, it is still generated on the farmland. You can look at it as having a CD (certificate of deposit). Because modern farmers have CDs, and they have money in the bank that is generating [profit] and you are not doing anything. My role as a farmer would not change, because you are harvesting a commodity. Just like a combine, would you plant or, or a tractor and corn planter. So, it is just another piece of equipment. And instead of owning it, you are renting it. And a lot of people lease tractors now these days as the economic situation is getting tough. So, it can be something different, but in my mindset, is this point is just another avenue of farm income? It is a commodity. We are just in a different type of era in which you got to do everything that is possible to survive. (37F).

Furthermore, some participants consider adoption of wind farming as the same as having a few family members helping with farming in the field or having some family members working off the farm to provide additional income to support and sustain the business. They believe that the benefits of wind farm outweigh the benefits of traditional farming. There is less responsibility involved in managing the wind farm business. "The company takes care of the towers and they pay taxes on the towers. All I can see is benefits except that they have to have a right of way to get in. I think they take care of the road into the tower. Yeah, they take care of all that. It is a win-win, we thought" (31M). Some producers argue that every farmer is on the land to generate income and profit. "Everybody is here because they want to make money. So, why shouldn't I? And we really don't have much liability" (31M). Thus, they believe that wind farm diversifiers

should not be viewed differently.

8.10.1.1 Farming is in Your Blood

Some participants asserted that farming is in their blood, thus adopting wind farm did not change or alter their identity as farmers. It has not changed the way they view or practice their daily activities and lifestyle. These interviewees indicated that despite that they consider themselves as entrepreneurs, and the wind farm has helped them increase their financial resources, they still practice their normal farming activities and way of life. One interviewee stated that despite he and his family are paid annually by the wind farm company for leasing their land to build wind turbines, other than attending church and local games and sports, they have no time to engage in any extra trips or take vacations that cost money.

> But the income we have is all we have. We haven't taken an extra trip or anything else because we have extra income, we do not have time for one thing. It helped to improve our family life but hasn't changed our way of living as far as being an entrepreneur that has got wind towers. We spend a lot of time on the farm not on Main Street, but we go to church, we go to basketball games and all of the sporting events and stuff like that. I can't see a bit of difference in as far as the people's attitude towards us because of having wind towers on our land. No, absolutely not, it is just part of the farming operation as far as I am concerned (32M).

This participant asserted that adopting wind farm only secures them some financial resources to sustain their farm. Thus, they are surprised about how their neighbors and community members perceive them and their role as being different. Another participant states, “farming is in your blood, and in the next year or two there is going to be some people that are getting in real trouble and having wind farm will help them stay where they are at and do what they want to do” (36M). He argues that without adopting nonconventional practices such as wind farming, some farmers are soon going to quit farming because of the financial strains.

In summary, most producers stated that despite having diversified into wind farming, their identity as a farmer has not been changed (although the community might view them differently) because they are still on the farm and farming remains their main source of income. They asserted that they are paid per wind turbine which is not a significant amount of money to alter their identity as farmers. Thus, they would not stop farming because of diversifying into wind towers. In other words, the wind farm money they receive is only used to supplement their returns and sustain the operation.

8.10.2 The Impact of Wind Farm Diversification on the Farm Legacy

In terms of whether diversification into wind has affected the legacy and family history of participants, they indicated that wind farm has not significantly affected their farm legacy. Instead, it helps them continue their farm legacy by providing them further financial resources to sustain their farms and pass their legacy down to the next generations. Specifically, the fact that many young members of farm families are not expected to continue farming (or return to the farm, if they have already left) plays a role in this belief.

> My land is going to be passed on to my children. And at this point, I feel that they are going to continue the farming operation. I think they are more apt to want to maintain the ownership because there is additional revenue from that land [wind farm] on top of the grain production. So, having wind farm will help my children to stay in farming and continue our legacy (39M).

Besides, some participants asserted that they view wind farming as a win-win situation because wind farm companies only utilize a small portion of the land and once the contract ends, farmers retain their land which can be used for other purposes.

Moreover, one interviewee described farm identity as values, beliefs, and legacy

that the farmer stands for and wants to pass them down generationally, which according to him, will only be maintained if the farmer adopts new innovative practices such as wind farming to sustain the business. Therefore, to him, the farm legacy is what the farm does to make the farm sustain economically. In other words, making the farm business economically sustainable increases the chances of the farmer identity being progressed, and farm legacy as well as farmer's beliefs and values being sustained.

> We do not have problem with making any change as long as it keeps us sustain our farm economically. You can't survive if you do not stay open minded and accept new ideas. You have to think and bring new ideas to keep the farm going. As far us our legacy, the legacy is what you do to keep the farm going. It is how you can bring new ideas and sustain the farm business. If you pay attention to what others tell you, you can't advance the farm and keep the legacy. You need to be creative and not doing it in traditional ways (38M).

This participant argued that the traditional farm identity needs to be regularly adjusted or updated. According to him, adopting wind farm diversification does not affect the traditional farm identity but, instead, it reinforces it.

Similarly, another participant asserted that the time is changing, and farmers need to move on and adopt whatever new practices that are available to help them remain in business.

> You got to change with times, you have to. The time changes and you have to move on. You have to try new things, not just the wind farm but if something new comes along, you need to try it. You have to help the farm sustain, and you can only have it sustain if you try new ways. I think what your legacy would be is to keep that land in the family, no matter what changes you make. The legacy is how you are able to continue farming not how you are farming. Farming is always going to change (36M).

According to this participant, farmers can only maintain their legacy by sustaining their businesses. To do so, they need to be innovative and adopt any nonconventional and nontraditional practices.

In summary, participants contested that farm identity needs to be adjusted and the legacy is not doing status quo to what previous farmers (parents and grandparents) have done. It is what participants are currently doing and planning to pass it on down to the next generations. In other words, they argue that every farm generation has its own meaning to their identity and farm identity needs to be adjusted every time a new generation take over the land, or whenever the economic situations and life circumstances necessitate doing so.

8.10.3 The Impact of Wind Farm Diversification on Farmers' Feelings about the Landscape and their Relationship with their Farmland

Regarding the impact of wind farm diversification on farmers' feelings about the landscape and their relationship with their farmland as the place where they live and operate, participants expressed a variety of views. Some of them indicated that they are not concerned about the impact of wind turbines on their landscape and their relationship with their farmland because they believe that the changes are inevitable. Others are concerned that wind farm diversification will affect their feelings about the beauty and scenery of the landscape and their relationship with their farmland. For instance, one participant is concerned that it is hard to accept the fact that wind turbines that are under construction on his land are going to be there for the rest of his life, or at least for decades. "I don't know that if it is going to be nice looking at them for the rest of my life" (36M). He asserted that not only is he concerned about his feelings toward the landscape being impacted because of diversifying into wind farming, but he is also concerned that the roads that are in the middle of his field (which are constructed by the wind farm company) will remain there for years. It should be noted that the wind company needs to

frequently use these roads to do the maintenance as long the wind turbines remain on the land.

While some participants do not perceive any impact of the wind farm on their operations, they, however, reported that their family members such as their spouses might perceive it differently. Their families are concerned about having wind turbines close by their residential buildings.

> I don't see any negative aspect of it [wind farm], but my wife may feel different about having them close by. Although I haven't noticed anything, but some people say it can affect their sleep. But again, it doesn't change my feelings. I feel positive about it having a business in the area and other benefits. It gives employment to people [the local community]. The men that do the repairs they become friends of mine (34M).

Similarly, other participants stated that adoption of wind farm diversification does not affect their feelings about the landscape because it just as similar as any farm business that they build on the farmland such as pig, dairy, or fish farm. They argued that, in the past, when farmers installed windmills, many of their neighbors opposed them, and as the time went, the community has normalized it. Thus, they believe that adoption of wind farming will be normalized as the time goes.

> As far as I am concerned, the wind farm is like bringing in a hog farm or a dairy farm, or fish farm. I call it all the same thing. It is another tool to bring money into your land. Wind towers would not affect our feelings about the landscape. I do not think so. It is just like having any buildings on your land, it is not much different (35M).

Some participants even expressed frustration about the reaction of their neighbors and the larger community toward their adoption of wind farm diversification.

One participant responded to the wind opponents that if they do not like the shadow flickers of wind turbines, they should turn their eyes away and look elsewhere at the time the shadow flickers are reflecting, especially if they are not directed toward their

residential facilities. According to this interviewee, some of his neighbors have forced wind farm companies not to build turbines on any their own farmlands because the expected shadow flickers might disrupt them [the opponents]. Although the above participant is frustrated about the opposition that forced out the wind farm in some places around their neighborhood, he, however, indicated that he respects the right of those who the shadow flickers might reflect on their buildings. He doesn't see shadow flickers as bothering him and his family.

> In fact, some people lost turbines because of that shadow flickers. They just couldn't be on anybody's house. But if you are outside and you see that thing flickering, don't look at it, look somewhere else. I mean, you don't have to look at that all the time. But if it was in my house, I wouldn't want that either. But the companies that are associated with wind farm are very conscientious about all of that (35M).

This indicated that the impact of wind farming on the feelings of some participants may depend on the proximity of the wind turbines to the dwellings. "The one in the north is close to my house, it is in a place that I will be seeing it every day. It is probably a quarter of a mile from my house. The other ones are three quarters of a mile away up the road" (35M). In other words, it depends how close the towers are to the residential areas. In some counties, wind companies provide financial support (annually pay a little amount of money as an incentive) to neighbors whose lands live close to the lands where wind turbines are developed and whose lands did not qualify for the wind farm. But in some places, neighbor have turned down that money. "And I think that the wind farm company has even made some steps to try and appease the people on the bridges. And some of them I know have turned down a cash offer because he said that that's just a slap in the face" (39 M).

Additionally, the disruption of the construction to their lands causes concerns to some participants. Having the scenery of landscape changed seem to impact the feelings of some interviewees. For instance, this producer states, “we don't know if we like it or not, because they are not up yet. But driving through the other places where I see wind turbines, it makes me think, wow, that is what it is, that is how it is going to look like?” (36M). According to him, watching wind turbines installed on other farmers’ properties seems to affect his feelings about the beauty of his landscape and the relationship between him and his farmland.

However, if wind turbines that are expected to be installed on the land are scattered, their impact to farmers’ feelings about the beauty and scenery of landscape might slightly be different, compared to farmers where these turbines are built in a close proximity. “But, ours are going to be scattered more than those are up there. They won't be quite as many of them but yeah, I don't know. We will see” (36M). Some participants indicated that wind farming has affected their feelings about the landscape and their relationship with the farmland, but they argued that the changes in farming will occur regardless of their adoption of wind power. “I am going to experience the negative aspects of wind development in our area whether I sign up or not, and so then I could just as well get some financial benefit for being in the area” (35M). They are convinced that wind farming will be in the area whether they adopt it or not, thus it is in their best interest to utilize the opportunity and generate further income and profit to sustain their business.

Similarly, some farmers expressed mixed feelings on whether to accept the change or adopt wind farm diversification. They are willing to adopt it and increase their

profit so that they can sustain their farm. Concurrently, they remain unhappy about its impact on their identity. Specifically, some participants are concerned about whether to adopt wind farm diversification and have their feelings of the farmland and landscape affected or to stick with nonconventional practices and experience economic challenges or remain uncertain about the future of their farms.

> Yes, and that will be one of the worst things [having the beauty and scenery of their farmland changed]. That land has been that way. I am in my late 50s and it has been that way, my whole life. And now all of a sudden, they are out there tearing it up and put these big towers up. And it is kind of hard to see it done. But I guess, progress has got to come too (34M).

Another participant expressed similar concerns, he indicated that the changes they make are inevitable. But he asserted that sometimes he feels that there is no difference between having wind turbines vs having a tree on his farmland (that he has been attached to) being destroyed or dead, which the person needs to cut and bring it down but at the same time feels the sorrow of the tree (although dead) being removed. Thus, the sense of grief for having the beauty and scenery of landscape changed or having certain things that farmers consider symbols (which they have been attached to for their whole lives) removed affected this participant.

> Yes, a little bit. That is my feeling. But at the same I am kind of thinking of the progress we must make on farm to survive. Sometimes I believe there is no difference, like you have a tree that is been there your whole life and now it is dead, and you got to cut it down. You feel bad about it because it is been there your whole life, and that is the way it is been. And that tree out a sudden now it is gone. Yeah, that is kind of the way it is (36M).

According to participants, farmers have strong attachment to their lands and certain features in their farmlands. They engage with certain animals, colors, or natural structures. Thus, adopting changes might affect their feelings towards these objects.

Even the construction activities that wind farm companies engage in to provide roads or access to places where they are expected to build wind turbines (particularly the erosion of the land around those facilities) has affected the feelings of some participants about their lands. Some interviewees are not only concerned about the economic loss that results from the heavy construction which damages to the crops, the land, and the grass, but they are more concerned about having the beauty and scenery of their farmland and landscape disrupted or changed. “Well, it is kind of hard to see these guys out there tearing everything, all the pieces. It is weird having them out there with cats and pushing up big mountains in there. I mean, they got there just wrecking the place. I hope it would go right in the long run” (36M).

While some participants feel thrilled that diversifying into wind farm provides them with adequate financial resources that they need to remain in business “yes, it has affected my feelings. And you lose maybe one or two acres of production for each tower, but when you think of a cash return from each tower, then you feel like you are getting quite well rewarded” (39M).Others, however, are not certain whether adopting wind farm diversification was a right decision. “Well, I just decided to just do it and see what happens, I guess. So, what else can you do?” (35M). They indicated that they are forced by the ongoing economic changes to adopt changes such as wind farm diversification as the chances to improve their income and profit and remain in business are decreasing.

Another participant expressed similar frustration and mixed feelings on whether to accept the impact of wind turbines on their land and generate income and profit to sustain their farm or speak to the wind farm company about the land degradation and potentially lose the opportunity to improve their farm operation and remain in business.

> Oh, it hasn't been, but it is a terrible traffic. I mean, we were moving cattle once last year, and here they come with cement trucks and they didn't even stop, they just came right on through. That part is affecting, but it is not a big thing, either you need to accept it, shut your mouth, and let them do whatever they want. Otherwise, you are going to lose the chance of having them (34M).

According to him, either he raises his concerns to the wind farm company and loses the wind farm business or accepts the challenges and gets paid by wind farming to improve his operation.

When asked whether the wind companies consult the landowners or negotiate the use of their property to create roads that are used to get to places where they are planning to build turbines, participants indicated they would negotiate but do not always follow the instructions of the landowners so that they can eliminate the disruption of, or cause damage, to the land.

> They will negotiate a little on that. But they had two towers north and instead of creating straight roads along each other, they had them not like the way it would have created less trouble to the farm and the soil. So, when the road is going to be crocked across your field, that feels bad (36M).

Despite some participants stating that they have built good relations with the construction workers that develop the wind turbines, they indicated that the plans to construct and use the roads in certain ways, and the spatial distribution of the turbines is all designated by the executive designers and managers of the wind farm companies. Therefore, there is little or no chance to negotiate and eliminate the impact of heavy equipment that are used

to bring in the turbines and install them.

8.11 Conclusion

Participants have expressed different perceptions about the impact of wind farm diversification on farmers' identity as farmers. Although they reported different perceptions about the meaning of farm identity and legacy, most participants indicated that wind farm diversification has little impact on their identity as farmers, including their role as farmers and their family legacy and farm history. Some participants asserted that their identity and family legacy as well as their feelings about the landscape and the relationship between them and their farmland have been impacted. However, they believe that the rewards they receive from wind farm companies for leasing their lands overweigh the impact of the wind farm project on their farm legacy. In fact, some interviewees argued that their farm identity will only be maintained by adopting wind farm and other nonconventional practices. Moreover, some participants have expressed mixed feelings on whether to adopt wind farm diversification and improve their farm business and have their farm identity affected or to stick with traditional practices and bear the financial challenges to remain in business.

CHAPTER NINE

DISCUSSION AND CONCLUSIONS

9.1 Introduction

This chapter summarizes and links together the findings, observations, and interpretations of the study in accordance with the literature review, research questions, objectives, assumptions, and the theoretical framework. It ties the findings of the study together and discusses them in light of the main argument of the study. Building on existing literature, the chapter presents new findings that will contribute to the field of sociology, particularly to research in agricultural entrepreneurship and the identity of farmers. The chapter also draws conclusions and highlights practical implications. Finally, it provides study limitations and suggestions for future research.

9.2 Summary of Findings

The study findings demonstrate that the ongoing economic challenges have impacted farmers who participated in this study. Consequently, participants have adopted different on-farm diversification practices to overcome these challenges. For instance, some of the practices they adopted include crop diversification, integration of crops and livestock, contracting services, wind farming, adopting conservation practices such as cover crops and no-till to reduce input costt. They also include adopting precision agriculture (e.g., using GPS and other technological tools) to reduce the use of seeds and fertilizers, leasing sheep and cows for sports, leasing pastureland, etc. Participants also indicated that they are planning to adopt other diverse practices in the future such as industrial hemp (if legalized in the state), solar energy, and contracting services for some

crops such as soybeans used to produce oleic oil and try new or increased usage of conservation practices.

However, adopting on-farm diversification has its own challenges that limited participants' ability to change their operations and stabilize or improve their income and profit (McElwee 2008). For instance, some of these challenges include changing their habits or mindset and transforming their farm operations from conventional to nonconventional practices, extra time and labor that is needed to manage several diversified practices at once, limited access to marketing for some diversified products, etc. Nonetheless, despite these challenges, many participants indicated that they are forced to diversify their operations (Stenholma and Hytti 2014). In fact, some of them are in the process of completely transforming their operations to nonconventional practices. Others are moving slowly into nonconventional practices but are uncertain whether they will entirely switch their activities to nonconventional practices.

The analyses show that adoption of on-farm diversification and other nonconventional practices also puts farmers in a state of uncertainty regarding whether to adopt farm diversification or to remain inconventional farming and face challenges to stay in business (Sutherland et al. 2016; Brandth and Haugen 2011; Fitz-Koch et al.2018; Stenholma and Hytti 2014). In this respect, participants, especially wind farm participants, indicated that while their feelings about the landscape and their relationship to the farmland are affected, they are concerned about losing the opportunity to improve their farms and remain in business.

As suggested in previous studies (Sutherland et al. 2016; Stenholma and Hytti 2014) adoption of nonconventional practices is expected to affect farmers' traditional

identity as farmers. My findings state that participants who lean more toward conventional farming perceive that holding traditional farming is necessary to preserve their social and cultural values and beliefs as producers. However, not all participants including those who adopted wind farm diversification perceive their traditional role similarly. Therefore, the impact of on-farm diversification on participants' identity varies based on the personal views and beliefs of about their roles and their social identity. For instance, some stated that they are not concerned about preserving their identity as farmers, they argue that the farmer's own values and beliefs (e.g., toward the environment and the meaning of good farmer), which change constantly, are what needs to be concerned about, not the identity itself.

It is also important to note that perceptions of participants toward certain types of diversification are homogeneous. For instance, all participants agree that farming is changing and that they need to adopt diversification to remain in business. They also agree that farm identity needs to be regularly adjusted or updated. Also, all participants who adopted wind farm diversification consider wind farming as any farming activity (such as crop or livestock, leasing out a farmland or equipment to other farmers or having certificate of deposit and savings). Most of them indicated that adopting wind farm diversification did not impact their identity as farmers, but some of them feel that their feelings about the landscape and farmland are somehow affected. Especially, a few observed that some wind turbines in their counties that were developed a few years ago have oil leakages. Some of them argue that every farmer gets extra money either by working off the farm or investing in financial institutions. Most participants stated that, from their own perspectives, on-farm diversification did not considerably affect their

identity as farmers, although their role in the community and their relationships with neighbors have been impacted, especially those who diversified into wind farming.

9.3 Discussion

The main objective of this study was to examine the types of on-farm diversification practices that South Dakota farmers adopted to increase their income and profit and to overcome challenges that are posed by the ongoing economic changes affecting agriculture as a sector and how these practices impacts their identity as farmers. To explore this, the study investigated how South Dakota farmers construct their identity and negotiate the meaning of their daily agricultural activities or the symbolic meaning that they attach to their practices, how the community views their roles as farmers, and the extent to which the identity or legacy of farming is important to South Dakota producers. The study also aimed to explore whether South Dakota farmers who lease their lands to wind energy corporations perceive engaging in this enterprise has an impact on their identity as farmers.

The findings support the importance of the study that the ongoing economic changes have impacted participants and led to restructuring of agriculture in South Dakota. Consequently, participants were forced to adopt on-farm and other nonconventional practices (Alsos et al. 2011). For instance, as result of the ongoing economic changes, participants experienced substantial challenges such as increasing debt and the lack of financial resources to support their families and sustain their farm businesses. These challenges are attributed to the difficulty that participants experienced to improve their returns or, at least, balance between the input costs and the returns,

especially due to the increasing input prices, market fluctuations, and changes in consumer preferences.

More specifically, my findings show that the ongoing economic challenges have forced participants to adopt various types of on-farm diversification (Barbieri, Mahoney, and Butler 2008; McElwee 2006) such as crop diversification, wind farming, integration of livestock, contracting services, and leasing pastureland and equipment to increase their income and profit and remain in business. Because of the challenges to improve their profit and the constant increase in input costs, my findings demonstrate that participants did not only engage in on-farm diversification. At least, half of them or their spouses work both on and off the farm to generate extra financial resources to support their families and purchase equipment and inputs (Brandth and Haugen 2011; Chaplain 2000).

From those who worked off the farm, approximately half of them work full-time both on-and off-farm, mostly to obtain health insurance [which about 60 percent described as a significant challenge] and afford equipment and inputs. In fact, these individuals asserted that without working off the farm, they would have left farming today. In general, only half of the participants exclusively worked on-farm at the time of the study. According to some participants, working off the farm can be a temporary solution to the lack of financial resources. However, in the long run, it is expected to lead to other problems such as time management and labor, especially to farmers who are planning to incorporate multiple diversification activities.

Furthermore, due to the complexity of modern agriculture which requires various entrepreneurial and managerial skills and knowledge that farmers need to obtain in order to remain in business (Fitz-Koch et al.2018), participants stated that they are faced with

new challenges. In other words, although they adopted different types of on-farm diversification to overcome the above economic challenges, their economic situations did not significantly improve. For instance, while adopting crop diversification appears to be helpful for farmers to increase their income and profit, participants realized that they need marketing skills and that there are limited markets in the local elevator for some diversified products such as small grain crops (Hansson et al. 2013; Siddiqui and Rahaman 2016). Even participants who tried to ship these products to the regional market were faced with the high cost of shipping and transportation.

Moreover, the analyses of my study show that in some occasions, participants also experienced lack of financial resources to purchase technology and engage in precision agriculture or to incorporate new practices such as livestock because it requires building infrastructure such as fences. Thus, my findings align with the conclusion of Morris, Henley, and Dowell (2016) that new agricultural practices are often expensive and require that farmers be equipped with adequate entrepreneurial skills (such as marketing skills), especially since some farmers have limited knowledge of new practices and lack needed entrepreneurial and managerial skills. To resolve the marketing problems, some participants hired individuals with marketing skills or collaborated with marketing firms, and others have joined firms that provide training on business development, including financial and operational management and marketing. However, despite the perceived benefits of such partnerships and collaborations with marketing firms, participants indicated that the cost of hiring individuals with marketing skills or collaborating with marketing firms is substantially high. Also, the cost of participating in business training is a challenge.

The analyses also show that farmers use their social networks to learn new innovative ideas (Baumgart-Getz et al. 2012). Participants reported that building social networks is a key factor in their businesses. Some of them have established social contacts with individual farmers and experts. Through these connections, they meet with experts and other farmers whether in local and regional conferences or visiting them in their business for advice and to learn new innovative ideas. In particular, some of the experts they established contacts with are farmers who run local farm corporations such as the Dakota Lakes Research Station, especially participants indicated that they trust experts who are farmers themselves because they can see by themselves the results of new practices these experts have adopted.

Furthermore, the study findings demonstrate that younger farmers are more likely to adopt on-farm diversification, but this excludes wind farm participants – as all wind farm diversifiers were over 56 years old. The age contributes to the success of farm business to the extent that some participants emphasized that farmers need to involve young generations in decision making and treat them as business partners, because young farmers bring new innovations, competences, and skills which can energize the farm business (Fitz-Koch et al. 2018; McElwee 2006). According to these participants, only through partnerships and collaboration between old and young farmers, can farmers bring modern and innovative skills into the business and be able to transform their farms to nonconventional agriculture and pass on their land to the next generations. Some of them argue that not only establishing partnerships is important in order to economically succeed, but also forming strong collaborations and effective communication and having

a better understanding between business partners can enable farmers to succeed in today's agricultural business.

Sociodemographic characteristics of farmers such as, age, education, and farm size contribute to farmers' adoption of on-farm diversification (McElwee 2005; Weltina et al. 2017). Participants indicated that education and training, previous experiences (both on-and off-farm) play a role in the success of farm business. Having previous experience, especially those related to business management contribute to farmers' economic success. My analysis also shows that younger farmers are more educated and innovative, thus collaborating with them and allowing them to make farm decisions provides farm families with a unique opportunity for their business success (Rivaroli et al. 2017). In addition, although in the study many older farmers expressed interesting comments about their perceptions toward diversification and agricultural entrepreneurship, I observed from the responses of participants that younger farmers tend to focus less on the cultural and social value of their farming such as identity and legacy. Instead, many of them seem to operate the farm as a business.

Farm size also contributes to the decision of farmers to diversify (Rivaroli et al. 2017). My findings indicate that small farm operators are more likely to diversify than large farm operators. While large farm operators are more likely to focus on specialization, small farm operators are more likely to diversify, as it provides them with different market options that help them remain competitive.

While farmers have been encouraged to adopt diversification to increase their income and profit and remain in business, the study finds that adopting on-farm diversification impacts farmers' identity as farmers, although not substantially (Delvin

2005; May et al. 2017; Stenholma and Hytti 2014). Thus, it is important to examine farmers' identity and how it is impacted by new agricultural trends and how developments in agriculture that led farmers to adopt on-farm diversification my reshape farmers' values, beliefs, and goals. Farmers' identity influences their decisions to diversify and the way farmers perceive themselves and their role, as well as the way the community views them once they adopt these new practices. My findings also show that adoption of on-farm diversification affects the interaction of farmers with their land, daily practices, and the community. To understand this impact, one of the objectives of this study was to explore how farmers construct their identity including the way they perceive their daily activities and lifestyle, and the symbolic meanings that they attach to their activities. In this study, it is shown that the way farmers construct their identity depends on how they got into farming and whether they perceive farming as a business and if the land is expected to be transferred to the next generations.

My findings add to existing literature in that, they are consistent with the conclusions of previous studies (Maybery, Crase, and Gullifer 2003; Devine-Wright 2009; Brandth and Huagen 2011; Stenholm and Hytti 2014) that farmers' attachment to the land and community influences their motivation to diversify and whether they identify themselves as producers or entrepreneurs, including that the stronger the attachment of farmers to the land the more careful they are in choosing or determining the type of diversified practices they adopt. However, my findings suggest that attachment of farmers to the land and community is not the only factor that determines farmers' decision to adopt on-farm diversification and the type of diversification they adopt. The way producers got into farming in the first place, whether they grew up on

farm and whether the land is inherited, also influences their decisions to diversify. It also determines how they perceive themselves or construct their identity.

Based on my findings, it is important to note that the way farmers got into farming also plays a role in whether they consider themselves producers or entrepreneurs. For instance, some participants who grew up on the farm and inherited the land indicated that farming is in their blood. These individuals asserted they will adopt certain diversification practices and will remain on the farm regardless whether they generate adequate income and profit. Others who operate the farm as a business, especially those who did not inherit the land have different perceptions. They stated that if they reached the point in which the land does not make profit, they will sell it and move to other places, because they do not have heritage on the land to preserve, or their views oppose the concept of farm identity and legacy.

Despite that participants who operate their farms as business run the farm as a business and that they will quit farming if they are not able to make a profit (because they are less concerned about preserving their farm identity), some of these participants indicated that they do not intend to entirely abandon their farm legacy. I believe this signifies the importance of the role of how farmers got into farming on their decisions to adopt farm diversification and the types of diversification that traditional farmers may adopt. Moreover, it is worthwhile to note that all wind farm diversifiers in this study got into farming by inheriting the land from their parents. Therefore, they are excluded in the analysis of farmers who got into farming by purchasing the land they operate. Also, some wind farm diversifiers identify themselves as producer farmers not businesspeople,

therefore, diversifying into wind farming seems to affect their traditional identity even more than its impact on the identity of nonwind farm diversifiers.

9.3.1 Theoretical Framework

The study uses two theoretical approaches to explain the impact of on-farm diversification on farmers' identity as farmers. Social identity theory helps us explain how farmers construct their identity, how they perceive themselves and their role, the way the community views them, and how they want the society to perceive them (McGuire et al 2015; Stern 2018). On the other hand, socio-ecological systems theory helps us explain the interaction between farmers and their social and physical environment and how it shapes their decision to diversify. The interaction between farmers and the social and biophysical environment in which they operate also shapes their views and values toward the importance of their identity. In other words, to understand this relationship, it is important to analyze the way farmers interact with their social and ecological environment.

My research shows that farmers' interpretation of the meaning of farming (or the symbolic meaning they attach to their daily activities and their role), and the way they perceive themselves or the values they hold varies (Fitz-Koch et al. 2018). Some participants perceive farming and their daily activities as a way of life. They view it as a social and cultural practice through which they constantly interact with the land, animals, the environment, their families, and the community. These participants described farming as a good place to raise a family and teach their children the farming values and work ethics that they believe their children would not find elsewhere. They believe that farming is a lifestyle and a distinctive identity in which the person, if willing to become a

farmer, needs to be raised with it, attached to it, and has learned farming since an early age. They reiterated that individuals will not succeed in farming without being raised on farm and learning the culture and values of farming. Based on these statements and adopting social identity theory, I conceptualize that because of the strong commitment of these participants to the land and the importance of the social and cultural aspect of farming to them, they will carefully assess and reassess any new farming practices that they are expected to adopt to ensure that they align with their values and beliefs, or that they do not challenge their social norms.

The findings also show that some participants consider themselves land stewards, thus I believe their perceptions and interpretation of farming and their identity are formed according to their values, beliefs, and goals of conserving the environment. To these individuals, caring about the land sustainability and promoting environmental ethics is a fundamental goal. To some of these participants, while generating profit and preserving the environment is the primary goal, being a farmer also means producing healthy food. Similarly, these participants will carefully assess the farming practices that they are expected to adopt. Again, they will only adopt the types of farm diversification activities that align with their values as farmers and environmental conservationists.

Furthermore, some participants consider farming as a business, thus their perceptions and values of farming are based primarily on their goal of generating profit. Therefore, their interpretation of the meaning of farming might be equivalent (although not typically the same) to businesses owners in nonagricultural sectors. These participants acknowledged that farming is a business and they are businesspeople, but at the same time they believe that farming is also a lifestyle, unlike other businesses. These different

interpretations of the meaning of farming determine whether the farmer holds strong views about his/her identity as a farmer, thus the impact of on-farm diversification on their identity depends on these interpretations (Brandth and Haugen 2011, Burton 2004, and Di Domenico and Miller 2012).

Some farmers also hold more than one identity or belief. Adopting the theory of social identity control (McGuire et al. 2015), I argue that farmers hold multiple identities and these identities are constructed and activated based on the interaction of farmers with their biophysical environment or the socio-ecological relationship between farmers and their physical environment. The attachment of farmers to their land and the community and the way they joined agriculture contribute to construction of farmers' identity as farmers and the way they view their roles after adopting diversification. Therefore, I believe that how farmers got into farming shapes their interaction with the social and biophysical environment.

In this respect, as McGuire et al. (2015) conceptualizes, when farmers encounter a social situation that aligns with their beliefs and values, their identity will be automatically activated. They will automatically accept the new practice or idea as it reflects their identity (values and beliefs). For instance, if the farmer believes in environmental conservation and s/he approaches a social situation that supports his/her beliefs about the environment, his/her identity will automatically be activated. However, when farmers experience a new situation that presents a new practice that does not align with their beliefs and values or challenges their norms, but demands that they adopt it, they will carefully assess and reassess such situations and decide whether to adopt it or not. In this instance, I theorize that participants with strong support of traditional farming

and its role will carefully evaluate their decisions and strategies where the new practice (whether it is on-farm diversification or any nonconventional practices) challenges their beliefs and values as well as whether it challenges their societal norms (Stern 2018).

Moreover, my findings demonstrate that although community reaction did not substantially affect participants as none of them halted their adoption of new practices because of community pressure, the fact that they live within a social environment affects their decisions (McGuire et al. 2015). In this respect, participants asserted that they operate in a social environment that has its norms and expects them to adhere to these social norms. Therefore, community reaction influences (although not extremely) farmers' decisions to diversify. Accordingly, I believe that as participants tend to maintain their traditional role and want the community to view them as a good farmer, they might hesitate to adopt some types of diversification practices. This situation was mostly observed among farmers who diversified into wind farming, perhaps because it was among the most visible to others. They asserted that while the level of community reaction was not critical enough to prevent them from adopting diversification practices, it, however, caused issues with social interaction between them and some of their neighbors who reacted to the new practices. In other words, even if it did not affect decisions of participants to diversify, community reaction has affected their social connections.

Indeed, some participants indicated that their adoption of on-farm diversification did not cause legal implications (such as their neighbor suing them in court). However, from a social perspective, they are concerned about their relationships with their community members, especially how their neighbors view them after engaging in farm

diversification. This signifies that farmers are eager to maintain their relationships and public image and to adhere to the norms and rules of society. These participants are concerned about how their social connections with their neighbors are going to be sustained after the tensions that resulted from reaction of neighbors has intensified to the extent that some neighbors do not greet each other. They asserted that they value their relationships with their neighbors and the sense of belonging to the community. Some of these participants believe that even if the farm business does not generate adequate profit, they will still stay in the community (Burke 2000). It is important to note that community reaction was intensive in some places to the extent that wind projects in these locations were turned down. Nonetheless, some of participants see community reaction differently. They indicated that receiving family and community reaction makes them reevaluate their plans to adopt new practices and to ensure that they are not breaking societal norms (Stet and Burke 2000).

Furthermore, adopting George Mead's theory of the self (Farganis 2004), I argue that participants perceive their actions as both objects and subjects. Their actions are objects from the eyes of the local community and their neighbors, and they are aware of the reaction of the community to their actions. As Mead (quoted in Fraganis 2004) states, the self can only exist within its social context. For instance, the statements of participants who believe that reaction of neighbors helps them improve their strategies to adopt on-farm diversification explain this situation. Also, some participants indicated that their neighbors always make comments about new practices that farmers in their area are adopting. For instance, some who diversified into wind farming expressed frustration that neighbors accused them of trying to be rich and are no longer farmers. A few participants

indicated that neighbors might have a valid argument for reacting to the new practices. These findings show how there are societal norms that neighbors want to preserve, thus they react whenever such norms are affected, and farmers will use neighbors' reactions to assess their goals and strategies and ensure that they not breaking those norms.

Indeed, my findings indicate that some neighbors of participants do not accept changes, or practices that challenge their social norms. In other words, their neighbors resist anything that seems to replace the traditional farming role of producers. In this respect, Sulemana and James (2014) argue that agricultural producers who plan to adopt diversification might not only fear uncertainty and risk-taking, they are afraid that the community might criticize them for not adhering to the societal norms when adopting new uncommon practices. Also, as Mead states, the person cannot become a self in a reflexive meaning without being an object to himself, "our actions are always engaged with the actions of others whose response to what we do send us signals as to their approval or disapproval" (Farganis 2004:143). Faragins (2004:143) continues, "we in turn are able to step out of ourselves and make our actions objects to ourselves so that we can analyze and assess the reactions of others." Based on these quotes, I believe participants consider themselves or make their activities objects to themselves and use neighbor's responses to reflect on themselves and act accordingly.

Participants are subjects too, they interpret their roles and the reaction of society to reflect who they are (e.g., the label of "I am a farmer," "I am a Christian," etc.) and their expectations that the local community sees them the way they view themselves and desire to be seen accordingly (Farganis 2004). For instance, some participants link their practices to their religious beliefs, which defines who they are. In this respect, they are

subjects to themselves but reflecting on the community reaction to their role, practices, and selves. Stern (2018) describes this situation as identity verification, which occurs when farmers realize that neighbors see them the way they (farmers) desire to be viewed.

This discussion leads us to the theme on whether farmers identify themselves as producers or businesspeople. Participants have different interpretations of their farming practices and their identity as farmers which shapes their understanding and the importance of their identity. In other words, it influences whether a farmer perceives him/herself as a producer or an entrepreneur. Di Domenico and Miller (2012) concluded that farmers' interpretation of their daily practices can determine whether they identify themselves as producer-farmers or entrepreneur-farmers. Therefore, in this study, I believe that the impact of on-farm diversification on participants' identity depends on how they got into farming and their interpretation of their role, the way they perceive themselves or construct their identity as farmers, and how the community perceives them and their role. There was no difference observed in how wind farm and nonwind farm operators got into farming. I only observed a slight difference in their perceptions about diversification and the importance of their identity as farmers.

The analysis of my data indicates that the way farmers got into farming and how they perceive and engage in their daily practices help to construct farmers' identity as farmers. For instance, growing up on farm and learning farming skills from an early age creates a specific lifestyle and makes farmers strongly attached to the farmer identity and defines who they are. It also allows them to be equipped with the basic skills of farming. According to Fitz-Koch et al. (2018), farmers' identity is often established by growing up on a farm. For instance, my findings indicate that most participants who have been raised

on farm and never left the farm (or only exclusively worked off the farm for a short period of time) tend to identify themselves as either a farmer or both a producer and entrepreneur-farmer, while most of those who grew up in places other than the farmland they operate tend to identify themselves as entrepreneurs or businesspeople.

Some of my analyses show a slight difference between findings and the conclusions of some previous scholars. For instance, while Stenholm and Hytti (2014) concluded in their study that the majority of their participants identified themselves as both producers and businesspeople, more than half of the participants in my study identified themselves as solely businesspeople. Partially, this might be attributed to the age of participants in this study. The highest percentage of participants in this study were between mid-30s to mid-50s, which are ages that in the farm sector can still be considered young. In the design stage and sampling, I deliberately selected farmers who have diversified their operations, and of course, as my findings state, young participants were more likely to diversify than older farmers. Some participants even argued that traditional farming today is invalid, they call for adoption of modern farming, although they acknowledge the challenges to transform their farm business to nonconventional practices.

While many participants who diversified into wind farms indicated that they feel that their identity (including their legacy and feelings about the landscape as well as their relationship with their farmland) is impacted, only a few participants who diversified into non-wind farm types of on-farm diversification stated they thought their identity has been impacted. Some participants (especially wind farm diversifiers) are frustrated that their new on-farm practices somehow challenge their identity including their feelings about

their farmland and landscape. Also, some participants might perceive less of some of the impacts of certain types of on-farm diversification such as wind farming because they are receiving substantial financial benefits as a result of such practices, which makes them feel less affected (Devlin 2005). These individuals indicated that although their identity as farmers is affected, the financial rewards they receive from the wind company makes them perceive minimum threat to their identity. Similarly, some of those who engaged in contracting services (especially custom feeding pigs) indicated that despite the resistance of neighbors, they perceive minimum threat to their identity as farmers[3].

In fact, some participants argued that traditional farming is outdated, and farmers need to either adopt farm diversification (not only on-farm diversification but any kind of practices that generate extra revenues) to transform their farm activities and remain in farming, or be forced to leave the business. Even participants who identified as both producers and entrepreneurs indicated that they operate farming as both lifestyle and business. They argue that farming is evolving, thus adoption of on-farm diversification and other nonconventional practices is a normal progress in agriculture and that changes are inevitable. According to them, the nature of farm business is changing because of globalization, technological advancements, and the related ongoing economic changes.

Indeed, my findings show that most participants, including those who expressed some sort of frustration due to the challenges associated with adoption of farm diversification, believe that adoption of on-farm diversification only reinforces their identity as farmers. But above that, they argue that only through adoption of farm

[3] Custom feeding refers to a situation in which the farmer engages in contract with a livestock company and based upon it the producer allows the company to build animals barns and facilities on the land in which s/he hosts and feeds the livestock. Accordingly, the farmer gets paid monthly.

diversification, farmers can maintain their identity as farmers. In this respect, some participants believe that farm identity and legacy are not static, they argue that farm legacy and identity change each time whenever a new generation takes over the land. Some of them also stated that legacy is what the person does to survive. Moreover, some participants even criticize the concept of farmer identity and legacy. They believe that these concepts are meaningless and that farmers who believe in them are only those using them to gain publicity from the public.

Some participants who believe traditional identity is worthless argued that what is important to preserve is not the identity itself, but the values and beliefs that the farmer stands for, which change in each farm generation. In other words, each generation can adopt its own values and beliefs about farming which determine their identity as farmers. For instance, according to some participants, a traditional good farmer identity (which they believe is outdated) was associated with the ability of the producer to use the best developed farming machines, chemicals, and fertilizers to ensure better yields and produce a maximum number of crop bushels per acre (Dobbs and Smolik 1994). However, as times passes, a good farmer identity has changed, and most producers are now moving into conservation. Some participants are purposefully integrating livestock with the aim of diversifying into cover crops, feeding them to the cattle, and having them produce manure that goes into the soil and restoring it, for example.

Furthermore, some participants have joined local conservation organizations such as the South Dakota Soil Health Coalition to learn new types of conservation practices or farm diversification strategies. They attend regional and local annual conferences that address adoption of new farm practices and exchange information with experts and other

farmers. Some participants have also engaged in networks with neighbors where they exchange information, learn, and reflect on each other's experiences. This has been particularly true for practices that are related to precision agriculture.

Nevertheless, there are some increasing tensions between participants who adopted on-farm diversification (such as wind farming and custom feeding) and their neighbors who oppose the new practices that they have adopted. Due to these tensions, farmers in some counties are unable to communicate with their neighbors. It is important to note that these informal communications between farmers are important sources of information, especially given that farmers often share their experiences about new practices informally (Morris, Henley, and Dowell 2017). Also, some farmers who did not adopt wind farm diversification are dissatisfied with the current social connections between them and their neighbors, because some farmers in their neighborhoods have retired and others have left farming due to the ongoing economic challenges. According to them, even some of their old neighbors are no longer interacting with them the way they used to do in the past, while the new neighbors are less interested in establishing contacts with them.

Information sharing plays a significant role in farmers' access to different entrepreneurial opportunities, especially those that are related to training and new innovative practices that are available in the area (Baumgart-Getz et al. 2012; McGuire, Morton, and Cast 2013; Morris, Henley, and Dowell 2017). Also, through these connections, farmers provide social support to each other (they rely on one another in difficult times), especially in the events in which a farmer experiences health issues or life circumstances that force him/her to seek help from neighbors. This has been the case

in some places in South Dakota to the extent that some participants believe that they would not be farming today without the help of their communities. Moreover, as the ongoing economic changes have affected farmers, the financial stress, depression, and anxiety have increased. Thus, percentages of suicide cases among producers are growing nationwide. Therefore, maintaining social connections is important to farmers and rural communities (Furey et al. 2016).

Revisiting the topic of tensions between producer-farmer identity and entrepreneur-farmer identity, it seems most participants in this study perceive giving up their traditional farmer identity or adjusting their operations to fit in the next agricultural practices as a challenge. It should be noted again that more than half of participants exclusively identified themselves as businesspeople. This might be the reason they are tolerant to new practices. Those who described themselves as producer-and entrepreneur-farmers also recognize the challenges that traditional farming is experiencing and consider themselves as in process of adopting (or increasing their adoption of) nonconventional practices. According to them, traditional farming challenges their ability to adopt new practices, become economically successful, and remain competitive to sustain their businesses. Simultaneously, these producers do not propose abandonment of their traditional farming identity.

In summary, despite the finding that most participants consider themselves businesspeople, many of them stated that they identify as both farmers and businesspeople. They argue that the two identities, producer-farmer and entrepreneur-farmer, are inseparable or can't be detached. They asserted that farming identity is constantly changing and that farmers need to adjust their traditional producer identity and

adopt on-farm diversification and other nonconventional practices to remain in farming, otherwise they will be left behind and forced to leave the business.

9.3.2 Contribution of the Study to the Field of Sociology

The current study contributes to the field of sociology, and the existing literature in agricultural and social entrepreneurship in general. First, this is the first study to examine the impact of wind farm diversification on farmers' identity as farmers. The study will increase our understanding of the nature of wind farm diversification, the motivation behind it, and its impact on farmers' identity as farmers. , Although one of my assumptions of the study was that wind farm diversification impacts farmers' identity as farmers, the study findings indicate that wind farm diversifiers do not see a huge impact on their identity, except a few of them reported that their feelings about landscape and their relationship with their farmland has been impacted. Another interesting finding that adds to existing literature on farm diversification and farmers' identity includes the developing concern of wind farm diversifiers about the potential of oil leakages that are caused by wind turbines as they age. This is an environmental problem that will need to be considered in more detail in the future. Also, although wind farm diversification did not affect participants' identity as farmers, it affected their relationships with their community members as a result of the increasing tensions that affect social contacts between farmers and their neighbors.

My research also adds to the field of sociology (especially agricultural entrepreneurship and farmer identity) as it highlights some of the benefits of wind farm diversification that were received less attention in the previous studies. For instance, participants who diversified into wind farm have used the wind farm tax revenues that are

allocated to local communities as an incentive to increase the acceptance of the potential wind farm opponents from neighborhoods or the local grassroots groups. They stated that it has been an effective strategy. However, the state of South Dakota has recently legislated to withdraw those tax revenues gradually (20 percent each year for the total of five years) once the wind farms enter their sixth year[4]. This has created disappointment among some wind farm participants. They stated that they are communicating with their state legislators and are hoping that the issue will be resolved. Otherwise, they believe it will affect the future of wind farm diversification in the counties that plan to adopt it.

Furthermore, bother important themes that will increase our knowledge of the farming business, which are built upon existing literature, are also examined in this study. For instance, the impact of health insurance and healthcare cost on farmers' operations and their decision to diversify. Participants have expressed concerns about the increasing cost of health insurance among farmers and unavailability of companies that provide health services to farmers and rural communities. Indeed, participants asserted that they or their spouses and some farmers in their communities are forced to work off the farm just to pay for health insurance. Although it has been highlighted in a few previous studies, this topic is increasingly getting attention nationwide (Zheng and Zimmer 2008) and, as of my knowledge, has not been studied in South Dakota. This is of course on top of the increasing economic challenges that farmers are facing. Because of challenges with affording health insurance, some participants indicated that they are unable to adopt various diversification activities.

[4] https://www.cfra.org/publications/WindEnergyTaxRevenueSD

Other important findings that contribute to field of sociology include 1) the importance of establishing business partnership between farmers and their families as well as their relatives. Forming business partnerships and running the farm as a family corporation and establishing effective communications and understanding between business partners has been addressed in the study. According to the findings and the existing literature, I believe that these types of partnerships bring diverse skills and competence into the business. It can also help farmers to retain their children on farm (Fitz-Koch et al. 2018; McElwee 2006), especially given the low rates of retention of children among farm families and lack of access to labor, as well as lack of access to land to expand the operation were repeatedly highlighted as significant concerns.

2) The impact of the recent changes in trade policies between the US and other countries. The findings indicate that these changes have affected farmers, especially crop producers and forced them to adopt more diversified crops. Particularly, those who still depend or until recently have relied on grain crops. In fact, some participants indicated that they did not sell some of their crops (e.g., soybeans) for the last two years because of the increasing decline in crop prices while facing challenges to buy inputs. Although some participants have hired marketing firms to help with selling their products, the cost of paying to these companies is also a concern.

The study design also brings another addition to the literature. The study has used combination of two theoretical frameworks that I believe were useful in explaining the findings. This contributes to the study because although some studies (e.g., McGuire et al. 2015) have used these theories, their research designs, questions, and findings are different. Also, the research adds to existing literature by introducing the effectiveness of

text messaging as form of communication to recruit participants (farmers). In this study, using text messaging was the most effective recruitment method/technique among other forms of communication such as emails, mailing, and phone calls to contact farmers. Therefore, this research adds text messaging to existing literature as an additional effective method of participant recruitment in rural areas or the farming community, particularly among younger farmers.

3) The disrupted social relationships between farmers either because of some farmers' adoption of wind farming that led to tensions between farmers and their neighbors or the loosening of social connections in these communities is also a key finding to note. Some farmers in rural areas have retired or have been forced by the ongoing economic challenges to leave the farm while the new neighbors who bought those lands are less interested in interacting with the old neighbors. Social relations between farmers provide social support and might reduce the chance of farmers experiencing stress and depression which is related to increase in the suicide rate across the state and nationwide (Furey et al. 2016).

9.4 Conclusions, Practical Implications, Suggestions for Future Research, and Limitations

The ongoing economic changes, technological advancements, and globalization of agriculture have affected farmers to the extent that some farmers are forced to leave the agricultural sector and other have either consolidated their farms or remained in the agricultural sector because of their attachment to the land and the community (Pyysiäinen et al. 2006; McElwee 2008; Stanford-Billington and Cannon 2010). For instance, changes in demand for agricultural products, increased costs of inputs, changes in consumer

preferences, and costs of technological tools related to precision agriculture including GPS equipped machines and robots that are used to collect data. To respond to these challenges, scholars, agriculturalists, and governments in different countries have called for restructuring of agriculture and encouraged farmers to adopt farm diversification and other nonconventional practices (Alsos et al. 2011). However, adoption of on-farm diversification and other nonconventional practices has been shown to impact farmers' identity as farmers (Sulemana and James 2014; McGuire, Morton, and Cast 2013; Brandth and Haugen 2011).

To understand the impact of on-farm diversification on farmers' identity as farmers (most participants in this study operate a family farm), in this study I interviewed 41 farmers in South Dakota who have adopted on-farm diversification to examine whether the on-farm diversification practices that they adopted impacted their identity as farmers. Accordingly, I examined how participants got into farming, the biggest challenges that they are facing today, the type of on-farm diversification practices participants adopted to overcome the indicated economic challenges, the main drivers to adopting on-farm diversification, and the role of training, networking, and innovation on their adoption of these practices. The study also examined the challenges that they encountered to adopt on-farm diversification or the factors that limit their adoption of new on-farm diversification, how participants view their role as farmers, participants' interpretations of their daily activities, how participants conceive themselves, and how their communities view their role as farmers.

Some themes and questions were adopted from the literature and others were designed by the researcher. These questions were then carefully reviewed and addressed

before and during the interviews to understand how participants value their traditional identity as farmers and to what extent they believe their identity is impacted as a result of their adoption of on-farm diversification. In other words, the study explored how South Dakota farmers construct their identity and negotiate the meaning of their daily agricultural activities or the symbolic meaning that they attach to their practices, how the perceive their nearby community members as viewing their roles, and the extent to which the identity or legacy of farming is important to South Dakota producers. The study also aimed to explore whether South Dakota farmers who lease their lands to wind energy corporations perceive that wind turbines that are built on their lands have an impact on their identity as farmers.

I conclude that several factors influenced participants' decision to adopt on-farm diversification, and the degree to which it affects farmers' identity as farmers (Delvin 2005; May et al. 2017; Stenholma and Hytti 2014). For instance, the way participants got into farming, participants' interpretations of the meaning of being a farmer, as well as the meaning of being a good farmer shape their views about farm diversification and the importance of their traditional farm identity. The findings also conclude that sociodemographic characteristics such as age, education, and farm size play a role in farmers' decision to diversify (McElwee 2005; Weltina et al. 2017). For instance, participants asserted that being young, educated, and possessing entrepreneurial skills allowed themselves or others to achieve more in their operations.

The findings also show that younger farmers are more educated and innovative, thus collaborating with them and allowing to them to make farm decisions provides farm families unique opportunities to diversify and have business success (Rivaroli et al.

2017). Larger farm operators are less likely to diversify. They concentrate on specialization while small farmers focus on diversification (Siddiqui and Rahman 2016). Moreover, previous experiences played a role in their decision to diversify their operations. The findings indicate that having previous experience, especially those are relating to business management significantly contributes to farmers' decision to diversify or adopt nonconventional practices.

As agriculture is changing, I find that participants are accepting of nonconventional practices. In fact, many participants asserted that traditional farming is outdated and that the change is inevitable (as the economic challenges continue), otherwise farmers will soon be forced to leave the business. Most participants indicated that, over time, a good farmer identity has changed, and that a traditional good farmer identity is outdated. In other words, most participants believe that the traditional and conventional farmer identity is obsolete and that there are new ways of viewing what is and is not a good farmer. However, at the same time, some of them asserted that the traditional family legacy and history of farming are important and can't be entirely abandoned. According to them, farmers are faced with substantial economic challenges, thus they need to adopt whatever practices are available to sustain their farms. Some participants expressed mixed feelings, they are undecided to either adopt nonconventional practices and sustain their farm while having the identity impacted, or to remain in traditional farming and retain the farming identity but bear the consequences such as uncertainty about the future of their farming.

Many participants believe that the farming business is a lifestyle, agricultural producers are attached to the land and the community, and they have emotional ties to

social and physical environment. Thus, they carefully assess their decisions to adopt nonconventional practices. Although most participants indicated that they consider themselves businesspeople, the majority of them stated that they identify as both farmers and businesspeople, arguing that the two identities (producer-farmer and entrepreneur-farmer) are inseparable or can't be detached. Nevertheless, they asserted that farming identity is constantly changing and that farmers need to adjust their traditional producer identity and adopt on-farm diversification and other nonconventional practices to remain in farming. Some participants even stressed that what is important is not to maintain the farmer identity itself, but the values and beliefs that the producer stands for, which is what the person tends to pass it on generationally.

In summary, based on these interpretations and assertions, my findings support the conclusions of previous studies (McGuire, Morton, and Cast 2013: McElwee 2005; Bartolini et al. 2014; McElwee 2005; Weltina et al. 2017; Rivaroli et al. 2017; Sutherland and Darnhofer 2012; Fitz-Koch et al.2018; Di Domenico and Miller 2012; Burton 2004; McGuire et al. 2015) that adoption of farm diversification affects farmers identity as farmers and that tensions between producer-farmer identity and entrepreneur-farmer identity exist. However, my findings draw slightly different conclusions regarding the impact of on-farm diversification on farmers' identity as farmers and the indicated tensions between the two identities. Perhaps, it is due to the increasing awareness among participants regarding the need to transform their business into nonconventional farming and the significant impacts of the ongoing economic changes on farmers to the extent that they do not perceive farm diversification as threat to their traditional identity as farmers. It is, however, important to note that although most participants perceived little threat on

their identity as farmers, some of them indicated that community reaction that resulted to their adoption of nonconventional practices and the loosening of social connections between neighbors have impacted their communities.

9.4.1 Practical Implications

Although the study is not generalizable due to its limited scope and the type of sampling, data, and methods used, I believe that it, at least, provides two practical implications that will help policymakers and practitioners with decision making that could affect the future of farming and agriculture in South Dakota.

First, while on-farm diversification practices and strategies (including wind farming) that are addressed in this study did not significantly affect the traditional identity of participants, the findings indicate that tensions between farmers who adopted wind farming and those who opposed it have impacted the social connections between farmers and their neighbors to the extent that some participants do not communicate or interact with the neighbors even years after the wind farms were proposed or built. I believe this issue is alarming because farmers depend on social support provided by neighbors. Thus, the significance of the existing social connections is great as they provide important social support to producers. They contribute to decreasing the chances of stress, depression, and anxiety among farmers (Furey et al. 2016). Specially, it has been documented recently that due to the ongoing economic changes, suicide rates among farmers are significantly increasing both nationwide (Furey et al. 2016; Hirsch and Cukrowicz 2014) and across the state of South Dakota[5].

[5] *Suicide Among Rural South Dakotans is a Serious Issue http://www.sdfu.org/news/article/suicide-among-rural-south-dakotans-is-a-serious-issue-786

Second, farmers who diversified into wind farming indicated that they have been using wind farm tax revenues (that go to local communities to support schools in their districts) as an incentive to increase the acceptance of local community members who oppose wind projects. However, the state has recently legislated to begin entirely withdrawing these funds in five years once the wind farm projects enter their sixth year. This issue has raised concerns about some wind farm landowners who also play a role in advocating for wind farm adoption. It is important to note that these individuals do not oppose the state taking certain portions of these funds and returning some of them back to the local community where wind farms are built. In other words, they do not want all of these revenues to be taken. This issue is significant to the community because as the ongoing economic situations are increasingly challenging to farmers, many participants believe that these funds will help them and other farmers to sustain their farm businesses.

Third, health insurance and health care access have been repeatedly highlighted during the interviews. Half of participants work off the farm and most of them do so just to afford health insurance. In the long run, this is expected to challenge farmers' ability to incorporate new nonconventional practices that will help them sustain the farms. Similarly, some participants also indicated that there only a couple of health care companies that currently provide health care for farmers and rural communities in the state of South Dakota. Thus, the research suggests that these issues be looked at carefully because with the ongoing economic challenges and the loosening of social connections

*Farmer suicides: Stress on the rise https://www.farmprogress.com/farm-life/farmer-suicides-stress-rise
*Suicide Rates in South Dakota, Plus Stats by Race and County https://dakotafreepress.com/2018/07/26/suicide-rates-in-south-dakota-plus-stats-by-race-and-county/

between farmers in rural areas, farmers might experience stress and depression that might lead to further health consequences (Furey et al. 2016).

9.4.2 Future Research

The current study has brought up many questions and themes that need to be further examined:

Further research is needed to examine the impact of wind farm diversification on farmers' social connections, especially social support is expected to play a significant role in the economic success of farmers and to reduce the level of stress and depression that results from the increasing economic challenges. Farmers reiterated that they rely on their neighbors during the difficult times when they need help. Sub-questions of the research might include: How do farmers perceive the future social connections between them and their neighbors or communities amid increasing tensions that are expected to cause disruption to social connections among farmers? And, what other factors play a role in deterioration of the social contacts among farmers? Especially, some participants (non-wind farmers) indicated that they are disappointed about the decreasing level of social connection between them and their neighbors.

Research is also needed to Investigate how wind farm tax revenues are used by communities and how they actually impact them and how this varies from wind farm to wind farm or place to place.

Another theme that I believe needs further research is the effectiveness of the established partnerships between family members to operating the farm as business or family corporation so that farmers can bring together different skills, experience, and

competencies. Examining the extent to which this strategy is common in the state of South Dakota can increase our knowledge about the usefulness of this entrepreneurial practices that some farmers in the state have adopted to improve their businesses.

This might include addressing challenges that may prevent farmers from forming such business partnerships. Some participants indicated that establishing such partnerships requires that family members (particularly young generations) and relatives be considered formal partners and be involved in decision making instead of having older generations guiding them. And finally, most importantly, can this practice keep children from leaving the farm? Given that farmers are facing challenges to retain their children on farms because of the economic challenges that make the farming business unable to generate adequate returns that can support parents and their children, this is particularly important to understand at both the operation and community level.

Although it was briefly addressed in the literature, further research can highlight the extent to which health insurance impacts famers to the extent that they and their family have to work off the farm. Some participants indicated that because of the ongoing economic challenges and the rising cost of health insurance, they and their spouses are forced to work off the farm and provide financial resources to support their families, pay health insurance, and provide inputs for their operations.

9.4.3 Study Limitations

The study limitations include the fact that it used nonprobability sampling in which a small number of farmers were selected nonrandomly to participate in the study. Thus, the study findings cannot be generalized. Also, the study included participants across the state (East and West river), the vast majority of participants had college

degrees or higher, and some of them frequently participated in local conferences such South Dakota Soil Health Coalition and NRCS meetings (or were members of the South Dakota Corn Association or the South Dakota Soybean Association) where they learn about new practices. Thus, they are at least exposed to some knowledge of conservation and diversification practices. Some farmers who have not joined these organizations or participated in local conference where farmers share information might be less exposed to new nonconventional practices. Also, those with lower education levels might report different perceptions about the impact of on-farm diversification on their identity and their views about a good farmer identity, as well as their concerns to maintain the traditional farmer identity. I believe doing a quantitative study where the researcher uses survey methods and collects data from a broader farm population might yield different results.

Some practical limitations include the difficulty to reach participants due to their busy schedules and winter weather conditions that made it harder for them to participate, especially ranchers. Due to the winter weather conditions, nearly half of interviews were conducted over the phone, and in some cases, it was challenging to properly communicate with participants over the phone with my accent. I suspect it made some participants decline their participation or not to return the voice messages because of the lack of trust in me and my identity when calling (Mayer and Musswailer 2011). Thus, care should be taken in future research to select a time to conduct interviews when travel is less likely to be impacted by weather if possible.

Moreover, while some participants were in their 80s, it was hard in some occasions to participate over the phone as one participant later explained. It could have

also been hard for senior participants to maintain the conversation over the phone throughout the interview (about an hour). Other perspective participants clearly voiced distrust about my identity and accent (Ralpley 2001) some of them hung up immediately after hearing my voice. Thus, I had to ask for help from my dissertation advisor who was able to set up interviews with some of those I could not. Also, this situation made it challenging to recruit participants to the extent that I had to frequently adjust my recruitment strategy. Furthermore, in many instances, it was hard to reschedule the interviews because participants could not find appropriate times that fit their schedules. Some of them agreed to participate but did not get a chance to do so due to their busy schedules working with cattle in the winter months (there were frequent winter storms) and once the winter weather improved, the calving season began for those who had livestock. Despite the fact that I had moved the interviews from November to January because it was fall harvest time, the extreme winter weather this year made it extremely challenging to find participants or to even reach them in their farms/ranches.

Furthermore, many wind farm landowners were not interested in participating because, as some of them indicated, there is a lot of politics in the wind farming business and farmers are hesitant to give out information about their operations. Also, finding wind farmers was extremely challenging. I spent a great amount of time searching online for contacts and information of wind farm landowners in South Dakota. Despite these efforts, in many occasions, I only got the landline numbers of wind farm landowners which was challenging to reach them because many people did not pick up the calls. It is also important to note that, as indicated in the methods chapter, most of the successful

contacts I was able to conduct were made via texting using the cellphone numbers of participants. Neither emails nor phone calls were as effective as text messages.

APPENDICES

Appendix A: Interview Guide

In this interview, I am going to ask you some questions about your farming operation, including the farming practices you use and how they have changed in the last couple of years. We will use your responses along with others to understand how South Dakota farmers are adapting to changing economic conditions.

Your participation in this interview is completely voluntary. If you choose to participate in this interview, your responses will remain confidential. No part of what you say, such as names or any personal or identifiable information, will ever be used in any publication or presentation. You may skip any questions you do not want to answer, and you can withdraw from the interview at any time. Are you willing to participate in the interview? Do you mind if I record this interview for transcription purposes?

Category 1 – Farm Characteristics

1. Can we start with you telling me about your farming operation?
    a. What crops do you currently grow on the land you operate?
    b. Do you have any livestock?
        i. If yes, what kind?
    c. Do you farm any family land?
    d. Do you partner with others to operate your farm?
        i. Do family members help with the operation in any way?
    e. Would you say you are a full- or part-time operator?
        i. If part-time, do you work off the farm for additional income?
        ii. If married, does your spouse work off the farm?

Category 2 – Adapting to Change

1. As a farmer, what do you think are the biggest challenges to operating a farm today?
2. Have there been any situations in recent years in which you felt you needed to change your on-farm practices in order to remain in business? Or, put another way, given the changes in agriculture these days, how have you worked to ensure that your operation remains financially viable through on-farm adjustments?
    a. Can you give me some examples of changes you have made?
    b. What new practices or changes have you adopted?
    c. When did you make such changes?
    d. What would you say were the main drivers to make such changes?
    e. What have been any challenges associated with making these changes?
    f. How have recent changes in trade policy between the U.S. and other countries impacted your operation?
    g. Has participating (or not participating) in the Federal Crop Insurance program influenced any changes on your operation? How?
3. Can you describe any plans you have to change your farm operation in the future?
    a. What might influence you to make changes to your farming operation?
    b. What are the changes you feel the next generation of farmers will need to make?
4. What kind of factors do you think limit your adoption of new on-farm practices or technology?
    a. Financial resources?
    b. Your beliefs regarding what types of practices farmers should use?

c. The role that you and your family as farmers play in your community?

5. In what type of situations might you consider getting completely out of farming?
6. Do you currently use any conservation practices such as cover crops, no-till, or grass or tree buffers on your operation?
    a. If yes:
        i. What practices?
        ii. What influenced you to adopt these practices?
        iii. What are some of the benefits you have seen to using these practices?
        iv. What are some of the challenges you have experienced using these?
    b. If no:
        i. What are some of the factors limiting your adoption?
        ii. What might influence you to adopt some conservation practices?

Category 3 – Identity as a Farmer

1. How would you describe your farm and your daily farming activities to someone who has no knowledge about your operation or the land you farm?
2. Could you tell me about how you got into farming? What made you want to be a farmer?
    a. Did your parents or other family members farm?
    b. How long have you or your family been operating the land you farm? Would you consider the property you are operating as home?

i. Do you hope that family will continue farming this land after you retire?

c. How long are you planning to remain on the farm?

3. What is it about this farmland and community that makes you want to stay (or leave)?
4. What does it mean to you personally to be a farmer today? Or, put another way, what does being a farmer or farming mean to you?
    a. For example, farming can be a cultural activity, a source of income, a place where family members associated with one another, etc.
5. What do you consider to be a "good farmer" today?
6. If I asked you whether you consider yourself to be a "good farmer," what would you say?
    a. Have the changes you have made recently made you feel less like a "good farmer?"
    b. How important is being a "good farmer" to you?
7. If someone were to ask you whether you were a farmer or businessperson what would you tell them and why?
8. Do you feel that the changes you described earlier will affect your farm legacy and history? How so?
    a. Do you think the changes you have made will affect your feelings about being a "traditional" or "good" farmer?
    b. How has your family or partner(s) reacted to these changes?
    c. How have your neighbors and other farmers reacted to these changes?

9. What encourages you to continue farming?
    a. Because you want to: keep your lifestyle? Maintain your family legacy? Improve quality of life for yourself and your family?
    b. What sort of trade-offs do you make to be able to stay in farming (e.g., compromising economic benefits to maintain family legacy, farming values/culture)?
10. Would you recommend farming to your children or non-farm friends? Why or why not?
11. If I asked people in your community, so people like your neighbors, fellow farmers, friends, family, or people in your area, about your role in the community, how do you think they may describe you?
12. Do you think your farm provides any non-economic benefits for your family or your local community?
    a. For example, strengthening social connections and bonds between you and your family, between old and new generations in your family, and between you and others in your community? Bringing the family together by having your children work on the farm? Providing for your family? A connection to the land and environment?

Category 4 – Demographics and Operation Details

I know this information is personal, but it would be useful to know a few more details about you and your operation.

1. How many acres do you currently operate?
    a. Has the number changed over time (e.g., gone up or down drastically)?

2. How many acres of the land that you operate do you own? How many acres do you rent?
3. In what year were you born?
4. What is the level of your formal education?

Category 5 – Interview Leads

1. Can you recommend any other people who I could talk with regarding how and they have changed their farming operations in recent years?
    a. Ask for contact information.

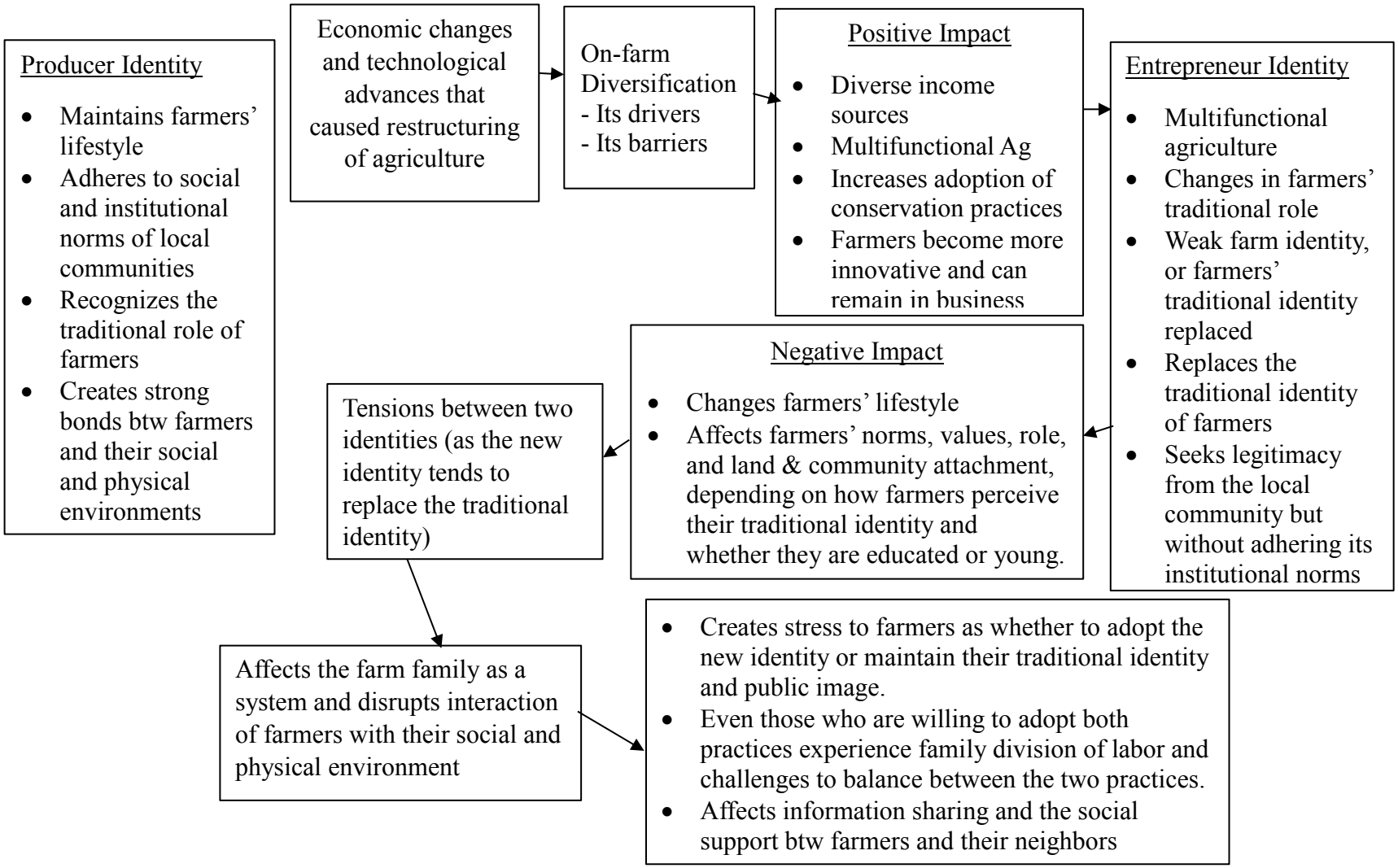
Thank you! Final Comments? Thank you very much for your time and information! Are there any final comments that you would like to add?

Category X – Wind Farm Diversification

1. Tell me about how you came to lease your land to a wind farm corporation or a community wind farm project.
    a. What was the primary reason for doing this?
        i. Economic? Environmental?
    b. What have been the benefits to doing this?
    c. What have been the challenges to doing this?
    d. How has it changed your overall operation and how it works?
2. Did changes you made affect your feelings about the landscape and the farmland as a place where you live and operate?
    a. Did wind turbines on your farmland affect the natural beauty of landscape and the relationship between you and your farmland?
    b. Would you recommend wind farm participation to others?

3. Did diversifying into wind change what you felt your role as a farmer is?
    a. Would still describe yourself as a “traditional” or a “good” farmer?
4. Did you feel that leasing your farmland to these companies made others view you and your role as a farmer in the community differently?
    a. Do you think others from your community still view you as a “good” farmer?
        i. How do you know how others feel? Do you have any examples of them telling you?
    b. Do you think it matters whether the wind turbines built on your land are community owned or commercial?
    c. Do you think the number of turbines matters? Or how much land you have leased?

Appendix B: Conceptual Framework



References

Aldous, Joan. 1996. "Family Careers: Rethinking the Developmental Perspective." 1st edition *SAGE Publications*, Inc, 316 pages.

Andrzej Czyżewski, Katarzyna Smędzik-Ambroży "Specialization and Diversification of Agricultural Production in the Light of Sustainable Development." *Journal of International Studies* 8(2): 63-73

Ansay, Sylvia J., Daniel F. Perkins and John Nelson. 2004. "Interpreting Outcomes: Using Focus Groups in Evaluation Research." *Journal of Family Relations* 53(3):310-316.

Bailey, Etienne, Patrick Devine-Wright, Susana Batel. 2016. "Using a Narrative Approach to Understand Place Attachments and Responses to Power Line Proposals: The Importance of Life-Place Trajectories." *Environmental Psychology* 48:200-211.

Baldwin, Claudia, Tanzi Smith, and Chris Jacobson. 2016. "Love of the land: Social-ecological connectivity of rural landholders." *Rural Studies* 51: 37-52.

Baumgart-Getz, Adam, Linda S. Prokopy, Kristin Floress. 2012. "Why Farmers Adopt Best Management Practice in the United States: A Meta-Analysis of the Adoption Literature." *Journal of Environmental Management* 96:17-25.

Barbieri, Carla, Edward Mahoney, and Larry Butler. 2008. "Understanding the nature and extent of farm and ranch diversification in North America." *Rural Sociology* 73(2): 205-229.

Bell, Andrew R., Jennifer Z. Cheek, Frazer Mataya, and Patrick S. Ward. 2017. "Do as they did: Peer Effects Explain Adoption of Conservation Agriculture in Malawi." *Water* 10 (51): 1-16.

Brandth, Berit and Marit S. Haugen. 2011. "Farm Diversification into Tourism – Implications for Social Identity?" *Rural Studies* 27: 35-44.

Botelho, Anabela, Pedro Arezes, Carlos Bernardo, Hernâni Dias, and Lígia M. C. Pinto. 2017. "Effect of Wind Farm Noise on Local Residents' Decision to Adopt Mitigation Measures." *International Journal of Environmental Research and Public Health 14(7): 753.*

Bowler, Ian, Gordon Clark, Alasdair Crockett, Brian Ilbery, and Alastair Shaw. 1996. "The Development of Alternative Farm Enterprises: A Study of Family Labour Farms in the Northern Pennines of England." *Rural Studies* 12(3): 285-295.

Brick, Cameron, David K.Sherman, and Heejung S.Kim. 2017. "'Green to be seen' and 'brown to keep down': Visibility moderates the effect of identity on pro-environmental behavior." *Environmental Psychology*, 51: 226-238.

Burton, Robert J. 2004. "Seeing Through the 'Good Farmer's' Eyes: Towards Developing an Understanding of the Social Symbolic Value of 'Productivist' Behavior." *Sociologia Ruralis* 44(2): 195-215.

Burton, Robert J. 1998. "The Role of Farmer Self-Identity in Agricultural Decision Making in the Marston Vale Community Forest." Thesis: Doctor of Philosophy, De Montfort University. Retrieved July 26, 2018 (https://core.ac.uk/download/pdf/2749314.pdf).

Calus, Mieke and Guido Van Huylenbroeck. 2010. "The Persistence of Family Farming: A Review of Explanatory Socio-economic and Historical Factors." *Journal of Comparative Family Studies* 41(5): 639-660

Campbell White & Associates Pty Ltd, and Alan Black. 2002. "Costs and Benefits of Diversification Whole Farm Case Studies." A report for the Rural Industries Research and Development Corporation. *Rural Industries Research and Development Corporation* Publication No 02/029, Project No ECU-7A, Australia.

Campbell, Catherine. 1997. "Self-Esteem in Context: A Case Study of The Motivational Processes Underlying Social Identity Construction by Township Youth." *Psychology in society* 22: 20-36.

Carlin, Thomas A. and John Crecink. 1979. "Small Farm Definition and Public Policy." *American Journal of Agricultural Economics* 61(5): 933-939.

Chaplain, Hannah. 2000. "Agricultural Diversification: A Review of Methodological Approaches and Empirical Evidence." Work Package 4, Working Paper 2, *Department of Agricultural Economics and Business Management, Wye College, University of London.* This Research Project is Financed by the EU Commission's 5th Framework Programme (QLRT-1526).

Coye, Molly J. 1985. "The Health Effects of Agricultural Production: I. The Health of Agricultural Workers." *Public Health Policy* 6(3): 349-370.

Department for Environment, Food, and Rural Affairs 2013. "Farming Statistics Diversification and Renewable Energy Production on Farms in England 2010." *A National Statistics Publication,* United Kingdom. Retrieved September 8, 2018. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/226310/structure-diversification2010-02aug13.pdf

DeCuir-Gunby, Jessica T. Patricia L. Marshall, and Allison W. McCulloch .2011. "Developing and Using a Codebook for the Analysis of Interview Data: An Example from a Professional Development Research Project." *Field Methods* 23(2):136-155.

Department for Environment, Food and Rural Affairs (DEFRA). 2007b. "Barriers to Farm Diversification." *Report of the Joint Industry-Government Working Group, UK.*

Devine-Wright, Patrick and Yuko Howes. 2010. "Disruption to Place Attachment and the Protection of Restorative Environments: A Wind Energy Case Study." *Environmental Psychology* 30: 271-280.

De Laurwere, Caroline. 2005. The Role of Agricultural Entrepreneurship in Dutch Agriculture of Today." *Agricultural Economics* 33:229-238.

Devine-Wright, Patrick. 2009. "Rethinking NIMBYism: The Role of Place Attachment and Place Identity in Explaining Place-Protective Action." *Community & Applied Social Psychology* 19: 426-441.

Devlin, Elizabeth. 2005. "Factors Affecting Public Acceptance of Wind Turbines in Sweden." *Wind Engineering* 29(6): 503-511.

DiGiacomo, Gigi, Robert King, and Dale Nordquist. 2010. "Building a Sustainable Business: A Guide to Developing a Business Plan for Farms and Rural Businesses." *A Report Developed by the Minnesota Institute for Sustainable Agriculture (MISA) and Published by Sustainable Agriculture Research and Education (SARE).*

Di Domenico, MariaLaura and Graham Miller. 2012. "Farming and Tourism Enterprise: Experiential Authenticity in the Diversification of Independent Small-Scale Family Farming." *Tourism Management* 33:285-294.

Dilshad, Rana M. and Muhammed I. Latif. 2013. "Focus Group Interview as a Tool for Qualitative Research: An Analysis." *Pakistan Journal of Social Science* 33(1): 191-198.

Dobbs, Thomas and James D. Smolik. 1994. "Long-Term Productivity and Profitability of Conventional and Alternative Farming Systems in East-Central South Dakota: A Case Study." *Department of Economics Research Reports, South Dakota State University.* Paper 48.

Dobbs, Thomas L. 1993. "Enhancing Agricultural Sustainability through Changes in Federal Commodity Policy: Marginal versus Radical." Change Policy Studies Program Report No.2, *Henry A. Wallace Institute for Alternative Agriculture*

Dorsey, Bryan 1999. "Agricultural Intensification, Diversification, and Commercial Production among Smallholder Coffee Growers in Central Kenya." *Economic Geography* 75(2):178-195.

Easter, Michele M., Arlene M. Davis and Gail E. Henderson. 2004. "Confidentiality: More than a Linkage File and a Locked Drawer." *Ethics and Human Research* 26(2): 13-17.

Emerson, Robert W. 2015. "Convenience Sampling, Random Sampling, and Snowball Sampling: How Does Sampling Affect the Validity of Research?" *Visual Impairment and Blindness* 109(2): 164-168. First Published March 1, 2015.

European Commission Directorate-General Agriculture and Rural Development. 2011. "Impacts of Renewable Energy on European Farmers: Creating Benefits for

Farmers and Society." Final Report. *Bas Pedroli & Hans Langeveld* (Eds.) Project# Agri-2010-Eval-03. Retrieved October 21, 2018. https://ec.europa.eu/agriculture/sites/agriculture/files/external-studies/2012/renewable-energy-impacts/full_text_en.pdf

Farganis, James. 2004. "The Emergent Self." In Readings in Social Theory: The Classic Tradition to Post-modernism. *McGraw-Hill Humanities/Social Sciences/Languages*, 4th edition, 464 pages.

Fitz-Koch, Sarah, Mattias Nordqvist, Sara Carter, and Erik Hunter. 2018. "Entrepreneurship in the Agricultural Sector: A Literature Review and Future Research Opportunities." *Entrepreneurship Theory and Practice* 42(1): 129–166.

Floress, Kristin, Silvestre García de Jalon, Sarah P. Church, Nicholas Babin, Jessica D. Ulrich- Schad, and Linda S. Prokopy. 2016. Toward a Theory of Farmer Conservation Attitudes: Dual Interests and Willingness to take Action to Protect Water Quality." *Journal of Environmental Psychology* 53: 73-80

Furey, Emilia M. Denis O'Hora, John McNamara, Stephen Kinsella, and Chris Noone. 2016. "The Roles of Financial Threat, Social Support, Work Stress, and Mental Distress in Dairy Farmers' Expectations of Injury." Front Public Health, 4(126): 1-11.

Gasson, Ruth and Andrew Errington 1993. "The Farm Family Business." *CAB International*, Wallingford.

Gasson, Ruth. 1973. "Goals and Values of Farmers." *Agricultural Economics* 24(3):521 - 542.

Global Statistics on Wind Energy Farming, *Global Wind Energy Council*. Retrieved September 24, 2018 http://gwec.net/global-figures/graphs/

Hansson, Helena, Richard Ferguson, Christer Olofsson, and Leena Rantamäki-Lahtinen. 2013. "Farmers' Motives for Diversifying their Farm Business – The Influence of Family." *Rural Studies*, 32 (2013) 240-250.

Hauser, Michael, Mara Lindtner, Sarah Prehsler, and Lorenz Probst. 2016. "Farmer Participatory Research: Why Extension Workers Should Understand and Facilitate Farmers' Role Transitions." *Rural Studies* 47:52-61.

Hendrickson, Mary K. and Harvey S. James. 2004. "The Ethics of Constrained Choice: How the Industrialization of Agriculture Impacts Farming and Farmer Behavior." *Agricultural and Environmental Ethics* 18:269–291.

Hennon, Charles. 2012. "Entrepreneurship, Farming, and Identity: A Phenomenological Inquiry." In Entrepreneurship - Gender, Geographies and Social Context, *IntechOpenm*, Mrach 2012, DOI: 10.5772/35601.

Hernandez, Bernardo, M. Carmen Hidalgo, M. Esther Salazar-Laplace, Stephany Hess. 2007. "Place attachment and place identity in natives and non-natives." *Environmental Psychology* 27: 310–319.

Hildenbrand, Bruno and Charles B. Hennon. 2005. “Above All, Farming Means Family Farming: Context for Introducing the Articles in This Special Issue.” *Comparative Family Studies* 36(3):357–367.

Hildenbrand, Bruno and Charles B. Hennon. 2008. “Beyond the concept of 'getting big or getting out': Entrepreneurship strategies to survive as a farm family.” *International Journal of Entrepreneurship and Small Business* 6(3): 479–495.

Hirsch, Jameson K. and Kelly C. Cukrowicz. 2014. “Suicide in Rural Areas: An Updated Review of the Literature.” *Journal of Rural Mental Health* 38(2): 65-78

Huylenbroeck, Guido V., Valerie Vandermeulen, Evy Mettepenningen, and Ann Verspecht. 2005. “Multifunctionality of Agriculture: A Review of Definitions, Evidence and Instruments.” *Living Review in Landscape Research* 1(3): 1-43

Iles, Alastair and Marsh Robin. 2012. “Nurturing Diversified Farming Systems in Industrialized Countries: How Public Policy Can Contribute.” *Ecology and Society* 17(4): 42.

Jacquet, Jeferry B. and Joshua Fergen, T. 2018. “The vertical patterns of wind energy: The effects of wind farm ownership on rural communities in the Prairie Pothole Region of the United States.” *Rural and Community Development 13*(2):130–148.

Junginger, Martin, Andre Faaij, Wim C. Turkenburg. 2005. “Global Experience Curves for Wind Farms.” *Energy Policy* 33: 133–150.

Karali, Eleni, Beat Brunner, Ruth Doherty, Anna Hersperger, and Mark Rounsevell. 2014. “Identifying the Factors That Influence Farmer Participation in Environmental Management Practices in Switzerland.” *Human Ecology* 42:951–963.

Kerstetter, Katie. 2012. “Insider, Outsider, or Somewhere in Between: The Impact of Researchers’ Identities on the Community-Based Research Process.” *Journal of Rural Social Sciences* 27(2), 2012, pp. 99–117.

Kirkhorn, Steven and Marc B Schenker. 2001. “Human Health Effects of Agriculture: Physical Diseases and Illnesses.” *National Agricultural Safety Database*. Retrieved September 18, 2018
http://nasdonline.org/static_content/documents/1827/d001772.pdf

Lakner, Sebastian, Stefan Kirchweger, Daniel Hoop, Bernhard Brümmer, and Jochen Kantelhardt. 2018. “The Effects of Diversification Activities on the Technical Efficiency of Organic Farms in Switzerland, Austria, and Southern Germany.” *Sustainability 10*(4): 1-18.

Lescourret, Francoise, Daniele Magda, Guy Richard, Anne-Francoise Adam-Blondon, Marion Bardy, Jacques Baudry, Isabelle Doussan, Bertrand Dumont, Francois Lefevre, Isabelle Litrico, Roger Martin-Clouaire, Bernard Montuelle, Sylvain Pellerin, Manuel Plantegenest, Elise Tancoigne, Alban Thomas, Herve´ Guyomard, and Jean-Francois Soussana. 2015. “A Social–Ecological Approach to

Managing Multiple Agro-Ecosystem Services." *Current Opinion in Environmental Sustainability* 14: 68-75.

Lobao, Linda and Katherine Meyer. 2001. "The Great Agricultural Transition: Crisis, Change, and Social Consequences of Twentieth Century US Farming." *Annual Review of Sociology* 27:103–24.

Lobley, Matt, Clive Potter, Allan Butler, Ian Whitehead, and Nick Millard. 2005. "The wider social impacts of changes in the structure of agricultural businesses." Final Report for Defra. Centre for Rural Research - University of Exeter. CRR Research Report No. 14: ISBN 1 870558 91 X

Lopez-i-Gelats, Feliu, Maria J. Milan, and Jordi Bartolome. 2010. "Is farming enough in mountain areas? Farm diversification in the Pyrenees." *Land Use Policy* 28:783–791.

MacDonald, James. 2013. "Cropland Consolidation and the Future of Family Farms" *Amber Waves,* September 2013 4-10. Retrieved September 4, 2018 https://www.ers.usda.gov/amber-waves/2013/september/cropland-consolidation-and-the-future-of-family-farms/

Makate, Clifton, Rongchang Wang, Marshall Makate, and Nelson Mango. 2016. "Crop Diversification and Livelihoods of Smallholder Farmers in Zimbabwe: Adaptive Management for Environmental Change. "*Springer Plus 5(1): 1-18.*

May, Roel, Andrew B. Gill, Johann Köppel, Rowena H. W. Langston, Marc Reichenbach, Meike Scheidat, Shawn Smallwood, Christian C. Voigt, Ommo Hüppop, and Michelle Portman. 2017. "Future Research Directions to Reconcile Wind Turbine–Wildlife Interactions." In: Köppel J. (eds) Wind Energy and Wildlife Interactions. Springer, Cham

Mayer, Jennifer and Thomas, Mussweiler. 2011. "Suspicious spirits, flexible minds: when distrust enhances creativity." *Journal of Personality and Social Psychology* 101(6): 1262–1277.

Maybery, Darryl, Lin Crase, and Chris Gullifer. 2003. "Categorizing Farming Values as Economic, Conservation and Lifestyle." *Economic Psychology,* 26: 59–72.

McElwee, Gerard. 2005. "Developing Entrepreneurial Skills of Farmers: A Literature Review of Entrepreneurship in Agriculture." A Research Report Produced for the Commission of the European Community. SSPE-CT-2005-006500 6th Framework.

McElwee, Gerard. 2006. "Farmers as Entrepreneurs: Developing Competitive Skills." *Developmental Entrepreneurship* 11(3):187–206.

McElwee, Gerard and Gary Bosworth. 2010. "Exploring the Strategic Skills of Farmers Across A Typology of Farm Diversification Approaches." *Farm Management* 13(12): 819-838.

McGuire, Jean, Lois W. Morton, and Alicia D. Cast. 2013. "Reconstructing the good farmer identity shifts in farmer identities and farm management practices to improve water quality." *Agriculture and Human Values* 30(1): 57–69.

McGuire, Jean, Lois Wright Morton, J. Gordon Arbuckle, and Alicia D. Cast. 2015. "Farmer Identities and Responses to the Social Biophysical Environment." *Rural Studies* 39:145-155.

Meraner, Manuela, Wim Heijman, Tom Kuhlman, and Robert Finger. 2015. "Determinants of Farm Diversification in the Netherlands." *Land Use Policy* 42: 767–780.

Milestad, Rebecka and Ika Darnhofer. 2003. "Building Farm Resilience: The Prospects and Challenges of Organic Farming." Journal of Sustainable Agriculture, 22(3):81-97

Mitropolitski, Simeon. 2015. "Interactive Interview: A Research Note." *Forum Qualitative Social Research* 16(1):1-12.

Memarsadeghi, Sanaz and Raj Patel. 2003. "Agricultural Restructuring and Concentration in the United States: Who wins, who loses?" *Institute for Food and Development Policy*. Policy Brief No. 6.

Morgan, Lloyd S., Terry Marsden, Mara Miele, and Adrian Morley. 2010. "Agricultural Multifunctionality and Farmers' Entrepreneurial Skills: A Study of Tuscan and Welsh Farmers." *Rural Studies* 26:116–129.

Moroney, Aisling, Seamus O'Reilly, and Mary O'Shaughnessy. 2016. "Taking the leap and sustaining the journey: Diversification on the Irish family farm." *Agriculture, Food Systems, and Community Development 6*(4):103–123.

Morris, Wyn, Andrew Henley, David Dowell. 2017. "Farm Diversification, Entrepreneurship and Technology Adoption: Analysis of Upland Farmers in Wales." *Rural Studies* 53: 132-143.

Myers, John R., Larry A. Layne, and Suzanne M. Marsh. 2009. "Injuries and Fatalities to U.S. Farmers and Farm Workers 55 Years and Older." *American Journal of Industrial Medicine* 52:185–194 (2009)

National Institute for Agriculture and Food. "Agriculture Technology." *United States Department of Agriculture*. Retrieved September 10, 2018 https://nifa.usda.gov/topic/agriculture-technology

National Institute of Food and Agriculture. "Family Farms." *United States Department of Agriculture.* Retrieved June 5, 2019 https://nifa.usda.gov/family-farms

Nelson, Lu. 2018. "Fact Sheet: South Dakota wind energy tax revenue." The Center for Rural Affairs https://www.cfra.org/publications/WindEnergyTaxRevenueSD Retrieved 6/8/2019

Hall, Nina, Peta Ashworth, Patrick Devine-Wright. 2013. “Societal acceptance of wind farms: Analysis of four common themes across Australian case studies.” *Energy Policy* 58: 200–208.

Oreszczyn, Sue, Andy Lane, and Susan Carr. 2010. “The role of networks of practice and webs of influencers on farmers’ engagement with and learning about agricultural innovations.” *Rural Studies* 26: 404-417

Parminter, Terry and A M L Perkins. 1997. Applying an Understanding of Farmers’ Values and Goals to their Farming Styles.” *Proceedings of the New Zealand Grassland Association* 59:107–111.

Parsons, Talcott. 1961. "An Outline of the Social System," pp. 36-43, 44-7, 70-2 from Talcott Parsons, Edward A. Shils, Kaspar D. Naegle, and Jesse R. Pitts (eds.), Theories of Society (*New York: Simon & Schuster, The Free Press* 1961).

Parsons, Talcott. 1951. “The Social System.” *First published in England 1951 by Routledge & Kegan Paul Ltd. New edition first published 1991 by Routledge 11 New Fetter Lane London* EC4P 4EE

Petrzelka, Peggy, Ann Sorensen, and Jennifer Filipiak. 2018. “Women Agricultural Landowners—Past Time to Put Them “On the Radar” *Society and Natural Resources* 31(7): 853–864.

Phillips, Emily. 1998. “The Social and cultural construction of farming practice: 'Good' farming in two New South Wales communities.” *Australia: Charles Sturt University*.

Pimentel, David. 2005. “Environmental and Economic Costs of the Application of Pesticides Primarily in the United States.” *Environment, Development and Sustainability* 7: 229–252

Pyysiäinen, Jarkko, Alistair Anderson, Gerard McElwee, and Kari Versala. 2006. “Developing the Entrepreneurial Skills of Farmers: Some Myths Explored.” *Entrepreneurial Behavior and Research* 12(1):21-39.

Quinn, Courtney E. and Angela C. Halfacre. 2014. “Place Matters: An Investigation of Farmers’ Attachment to Their Land.” *Human Ecology Review* 20(2):117-132.

Rapley, J. Timothy. 2001. “The Art(fullness) of Open-ended Interviewing: Some Considerations on Analyzing Interviews.” *Qualitative Research* 1(3): 303-323.

Reganold, John P., Lloyd F. Elliott, and Yvonne L. Urger 1987. “Long Term Effects of Organic Conventional Farming on Soil Erosion.” *Nature* 330(26)370-372.

Rhodes, Christopher J. 2017. “The Imperative for Regenerative Agriculture.” *Science Progress* 100, (1): 80-129(50).

Rivaroli, Sergio, Raino Ghelfi, Aldo Bertazzoli, and Annette Piorr. 2017. “Diversification Pathways and Farming Systems: Insights from the Emilia-Romagna Region, Italy.” *Outlook on Agriculture* 46(4): 239-247.

Salihu Hamisu M.; Ronee E. Wilson, Lindsey M. King, Phillip J. Marty, Valerie E. Whiteman. 2015. "Socio-ecological Model as a Framework for Overcoming Barriers and Challenges in Randomized Control Trials in Minority and Underserved Communities." *International Journal of MCH and AIDS* 3(1):85-95.

Schwalbe, Michael L. and Douglas Mason-Schrock. 1996. "Identity Work as Group as Group Process." *Advances in Group Processes*, 13:113-147.

Siddiqui, Shamsul H. and Hasibur Rahaman. 2016. "Crop Diversification in Relation to Time and Space: A Study from Malda District." *International Journal of Informative and Futuristic Research* 4(2): 5133-512.

Stanford-Billington, Caroline and Adrian Cannon. 2010. "Do Farmers Adopt A Strategic Planning Approach to the Management of Their Businesses?" *Farm Management* 14(1): 3-40.

Stenholma, Pekka and Ulla Hytti. 2014. "In Search of Legitimacy under Institutional Pressure: A Case Study of Producer and Entrepreneur-farmer Identity." *Rural Studies* 35: 133-142.

Stern, Marc. 2018. "Social Science Theory for Environmental Sustainability." *Oxford University Press.*

Stets, Jan E. and Peter J. Burke. 2000. "Identity Theory and Social Identity Theory." *Social Psychology Quarterly* 63(3): 224-237.

Sulc, R. Mark and Alan J. Franzluebbers. 2014. "Exploring integrated crop–livestock systems in different ecoregions of the United States." *European Journal of Agronomy* 57: 21–30.

Stock, Paul V. and Jérémie Forney. 2014. "Farmer Autonomy and Farmer Self." *Rural Studies* 36:160-71.

Sulemana, Iddisah and Harvey S. James. 2014. "Farmer identity, ethical attitudes and environmental practices." *Ecological Economics* 98: 49–61.

Sutherland, Lee-Ann, Luiza Toma, Andrew P. Barnes, Keith B. Matthews, Jon Hopkins. 2016. "Agri-environmental diversification: Linking Environmental, Forestry and Renewable Energy Engagement on Scottish Farms." *Rural Studies* 47:10-20.

Sutherland, Lee-Ann and Ika Darnhofer. 2012. "Of organic farmers and 'good farmers': Changing habitus in rural England." *Rural Studies* 28:232-240.

Sutherland, Lee-Ann., Kirsty L. Holstead, Christ Brown and Gerald Schwarz. 2012. "On-Farm Wind Energy Production in Aberdeen shire." FarmPath Regional Sustainability Transitions Series. *The James Hutton Institute*, Aberdeen, Scotland, UK. Retrieved October 21, 2018
http://farmpath.hutton.ac.uk/sites/www.farmpath.eu/files/FinalAberdeenshirerenewables.pdf

Sutton, Jane and Zubin Austin. 2015. "Qualitative Research: Data Collection, Analysis, and Management." *California Journal of Health-System Pharmacists* 68(3): 226-231.

Tassell, Van W. and Luther H. Keller. 1991. "Farmers' Decision-Making: Perceptions of the Importance, Uncertainty, and Controllability of Selected Factors." *Agribusiness* 7(6):523-535.

Taylor, Janet E., Joan E. Norris, and Wayne H. Howard. 1998. "Succession Patterns of Farmer & Successor in Canadian Farm Families." *Rural Sociology* 63(4):553-573.

Theodori, Gene L. 2005. "Community and Community Development in Resource-Based Areas: Operational Definitions Rooted in an Interactional Perspective." *Society and Natural Resources* 18:661–669.

Tonts, Mathew, Campbell White & Associates, and Alan Black. 2000. "Socio-Economic Impacts of Farm Plantation Forestry on Australian Rural Communities." *(Draft report)* Canberra: *Rural Industries Research and Development Corporation*.

Tonts, Mathew and Alan Black. 2002. "The Impacts of Changing Farm Business Structures on Rural Communities." *Rural Industries Research and Development Corporation*, Publication No. 02/027, Project No. ECU-10A.

Taragola, Nicole, Fleur Marchand, Marijke Meul, Steven V. Passel, Joost Dessein, and Ludwig Lauwers. 2014. "Development of an Entrepreneur Scan as a Driving Force for Sustainable Farming." *World Conference on Entrepreneurship, Entrepreneurship and Sustainability, Final Proceedings.* ICSB, Dublin, Ireland, 59th Conference of the International Council for Small Business (ICSB), Dublin, Ireland.

Urban, Boris and Gugulethu Xaba. 2016. "Enterprise skills and performance: an empirical study of smallholder farmers in Kwa-Zulu Natal." *Contemporary Management* 13:222-245.

General Contracting Brochure. 2008. "Contracting in Agriculture: Making the Right Decision." *United States Department of Agriculture* – USDA. Retrieved September 27, 2018 https://www.gipsa.usda.gov/psp/publication/AMS_contracting/contracting.pdf

Van Keulen, Henk, Egbert A. Lantinga, and H.H. Van Laar (eds). 1998. "Mixed Farming Systems in Europe." Workshop Proceedings, Dronten, The Netherlands. Landbouwuniversiteit Wageningen

Vesala, Hannu T. and Kari M. Vesala. 2010. "Entrepreneurs and Producers: Identities of Finnish Farmers in 2001 and 2006." *Rural Studies* 26: 21–30.

Vilsack, Tom and Cynthia Z.F. Clark. 2011. "On-Farm Renewable Energy Production Survey (2009)." 2007 Census of Agriculture, *United States Department of Agriculture – National Agricultural Statistics Service,* Volume 3, Special Studies, Part 6. Retrieved October 21, 2018

https://www.nass.usda.gov/Publications/AgCensus/2007/Online_Highlights/On-Farm_Energy_Production/energy09.pdf

Vorkinn, Marit and Hanne Riese. 2001. "Environmental Concern in a Local Context: The Significance of Place Attachment." *Environment and Behavior* 33(2):249.

Vuillot, Carole, Nadège Coron, François Calatayud, Clélia Sirami, Raphael Mathevet, and Annick Gibon. "Ways of farming and ways of thinking: do farmers' mental models of the landscape relate to their land management practices?" *Ecology and Society* 21(1): 35.

Walford, Nigel Stephen. 2005. "Agricultural restructuring during the closing decades of the twentieth century: Evidence of farm size in South East England." *Geography* 90(3): 238-249.

Walker, Brian and David Salt. 2006. "Resilience Thinking: Sustaining Ecosystems and People in a Changing World." *ISLANDPRESS*, Washington, Covelo – London.

Warren, Charles R., Rob Burton, Olivia Buchanan, and Richard V. Birnie. 2016. "Limited Adoption of Short Rotation Coppice: The Role of Farmers' Socio-Cultural Identity in Influencing Practice." *Rural Studies* 45: 175-183.

Weltina, Meike, Ingo Zasadaa, Christian Frankeb, Annette Piorra, Meri Raggic, and Davide Viaggi. 2017. "Analysing Behavioural Differences of Farm Households: An Example of Income Diversification Strategies Based on European Farm Survey Data." *Land Use Policy*, 62: 172–184.

Wenger, 2000. "Etienne Communities of Practice and Social Learning Systems." *Organization* 7(2): 225-246.

Williams, William. M. 1963. "The Social Study of Family Farming." *The Geographical Journal* 129(1) 63-75.

Willock, Joyce, Ian J. Deary, Gareth Edwards-Jones, Gavin J. Gibson, Murray J. McGregor, Alistair Sutherland, John B. Dent, Oliver Morgan, and Robert Grieve. 1999. "The Role of Attitudes and Objectives in Farmer Decision Making: Business and Environmentally-Oriented Behaviour in Scotland." *Agricultura1 Economics* 50(2):286-303.

Wilson, Paul, Nicholas Harper, and Richard Darling. 2013. "Explaining Variation in Farm and Farm Business Performance in Respect to Farmer Behavioral Segmentation Analysis: Implications for Land Use Policies." *Land Use Policy* 30:147– 156.

Wimalawansa, Shehani A. and Sunil J. Wimalawansa. 2014. "The impact of changing agricultural practices on human health: Chronic kidney disease of multi-factorial origin in Sri Lanka." *Wudpecker Journal of Agricultural Research* 3(5):110 – 124.

Winsberg, Morton D. 1982. "Agricultural Specialization in the United States since World War II." *Agricultural History* 56(4): 692-701

Wustenhagena, Rolf, Maarten Wolsink, Mary J. Burera. 2007. "Social Acceptance of Renewable Energy Innovation: An Introduction to the Concept." *Energy Policy* 35:2683–2691.

Xiarchos, Irene M. and Avery Sandborn. 2017. "Wind Energy Land Distribution in The United States of America." *United States Department of Agriculture.* Retrieved October 21, 2018 https://www.usda.gov/oce/energy/files/FINAL-Wind_Energy_Land_Distribution_in_the_United_States_of_America_7282017.pdf

Zakaria, Siti-Hajar, Fadzilah M. Shariff, Mohd M. Mahat, and Norhaslin A. Hassan (2015). "Entrepreneurial Knowledge and Hospitality Awareness of Agro-Tourism." *Theory and Practice in Hospitality and Tourism Research* - Proceedings of the 2nd International Hospitality and Tourism Conference 2014 (pp. 275-278). CRC Press/Balkema.

Zheng, Xiaoyong and David M. Zimmer. 2008. "Farmers' Health Insurance and Access to Health Care." *American Journal of Agricultural Economics* 90(1): 267–279